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INDUSTRY AND ENVIRONMENT PROGRAMME ACTIVITY CENTRE

U.S. EPA - UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

TECHNICAL REPORT
SERIES N° 9

International Cleaner Production Information Clearinghouse

ICPIC User Guide

Version 1.0

International Cleaner Production Information Clearinghouse (ICPIC)

User Guide

Version 1.0

UNEP

United Nations Environment Programme
Industry and Environment Programme Activity Centre
39-43 Quai André Citroën
75739 Paris Cedex 15
France

U.S. Environmental Protection Agency
Office of Environmental Engineering and Technology Demonstration (RD - 681)
Pollution Prevention Information Clearinghouse
401 M Street, S.W.
Washington, D.C. 20460

September 1993

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Notice:
This user guide is intended to aid you in accessing information provided through the United Nations Environment Programme Industry and Environment Programme Activity Centre (UNEP IE/PAC). The International Cleaner Production Information Clearinghouse (ICPIC) was designed as a communication tool to enable users to exchange cleaner production information and ideas with their peers.

ICPIC users are encouraged to provide comments and suggestions on all aspects of this system, their individual needs, and this user guide. ICPIC is a dynamic system that will change to meet users' needs and allow participants to interact with each other and contribute new and updated information to the system.

Updates:
Subsequently, sections of the User Guide will be updated periodically to reflect major changes to the system. It is suggested, therefore, that you fill out the ICPIC User Address Form in Appendix G. You will then be sent updates. You may also wish to punch holes in the pages and place the User Guide in a binder.

Please submit any and all comments on this version to IE/PAC as soon as possible via ICPIC or in writing to:

UNEP IE/PAC
39-43 Quai André Citroën
75739 Paris Cedex 15
France

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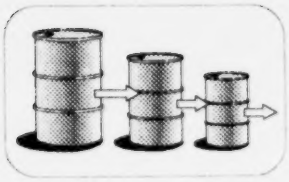


As costs of energy, raw materials, and waste disposal escalate and the risks of their environmental impacts are becoming increasingly known, today's challenge for industry is to adopt preventive strategies that reduce dependence on reactive "end-of-pipe" environmental management methods — burial, incineration, treatment, and export — by discovering methods to:

- conserve energy and raw materials consumed along the entire life cycle of the products,
- eliminate toxic raw materials and products, and
- reduce the amounts and toxicity of waste and pollutants generated by process and products.

To do so, progressive companies are changing their environmental policies and practices and using such tools as process audits and life cycle analysis to evaluate industrial processes and redesign products. The result is a reduction in overall environmental cost and impacts of production and consumption.

Progress in developing cleaner production techniques has been made in many countries. A way to make the results widely known and to transfer and exchange technologies and practices across national boundaries is needed.

For more information about UNEP's Industry and Environment Programme Activity Centre, see Appendix A

Through its Industry and Environment Programme Activity Centre (IE/PAC) in Paris, UNEP has established a network for the exchange and dissemination of information on cleaner production to link existing information sources in different countries.

The UNEP IE/PAC Cleaner Production Programme

The United Nations Environment Programme (UNEP) Industry and Environment Programme Activity Centre (IE/PAC) Cleaner Production programme was launched in response to a decision from the UNEP Governing Council on the need to reduce global industrial pollution and waste.

The objectives of the Programme are to:

- increase worldwide awareness of the cleaner production concept;
- help governments and industry develop cleaner production programmes;
- foster the adoption of cleaner production, and
- facilitate the transfer of cleaner production technologies.

To meet these objectives, the Programme focuses on the collection and dissemination of information on cleaner production that:

- explains the concept,
- illustrates technical applications, and
- helps people develop cleaner production programmes.

These efforts, initiated through a number of different activities, have cultivated an ever-expanding informal network of cleaner production experts, both in the public and private sectors.

The Cleaner Production Programme contains four major elements:

Publications. Among the publications offered by the Cleaner Production Programme are:

- the Cleaner Production Newsletter, a semi-annual publication that provides outreach and educational information,
- *Packaging and the Environment*
- *Audits and Reduction Manual for Industrial Emissions and Wastes*
- *Climate Change and Energy Efficiency in Industry*
- *Report on the Workshop on Country-Specific Activities to Promote Cleaner Production.*

Training and Technical Assistance. The Cleaner Production Programme provides workshops and seminars for government, industry and academia to:

- increase awareness and promote action,
- educate people,
- help develop cleaner production programmes.

Upon the requests of governments, the Cleaner Production Programme can help by: fostering links between experts; launching demonstration projects; promoting national and local activites in cleaner production; and providing expertise for audits. For example, a UNEP IE/PAC and UNIDO joint project will support National Cleaner Production Centres in 20 countries.

Working Groups. The programme uses working groups to facilitate the collection and dissemination of information, help to expand the worldwide cleaner production network, and provide expertise for training workshops.

The working groups currently providing input to the Cleaner Production Programme include:

- leather tanning,
- textile,
- metal finishing,
- pulp and paper,
- biotechnology industries,
- data networking,
- education, and
- policy, strategies, and instruments.

The International Cleaner Production Information Clearinghouse (ICPIC). ICPIC, which is run in cooperation with the U.S. Environmental Protection Agency is designed to transfer technical, policy, programmatic, and financial expertise on cleaner production. The system provides easy access to the UNEP IE/PAC international network and is available to anyone with access to a computer, a modem, communication software,and a telephone line. ICPIC can assist you to:

- identify technical process options to make products and their production cleaner;
- establish cleaner production programmes within your country;
- save money by showing you illustrations of how to reduce waste;
- identify upcoming events, conferences, training sessions, seminars and workshops, and
- locate cleaner production experts and documents.

ICPIC is dedicated to reaching as many groups as possible.

Primary targets of ICPIC include:

- Industry and trade associations
- Research institutions
- National and local governments
- International organizations.
- Nongovernment and public interest groups

ICPIC, thus, is an information resource and communication network that allows those who wish to establish cleaner production programmes, implement industrial options, or develop research and development projects, to benefit from the experience, progress, and knowledge of their peers.

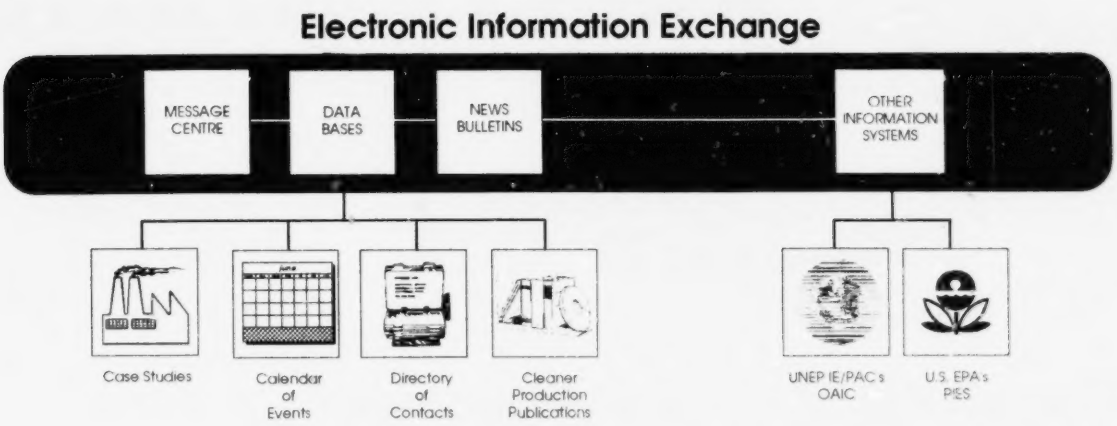
ICPIC features include:

- **Message Centre** – A feature that allows electronic communication with other network members. You may ask and answer questions or leave information and system updates.
- **Bulletins** – Latest announcements and news on developments in the international cleaner production community.
- **Calendar of Events** – Listing of upcoming national and international conferences, training seminars, and workshops.
- **Case Studies** – A data base of technical case studies highlighting industry and waste involved, economic incentives, and time to recover costs.
- **Cleaner Production Publications** – A data base of more than 1150 abstracted cleaner production documents, with information on where to order them.
- **Directory of Contacts** – Contact information for experts knowledgeable in cleaner production techniques for specific industries and policies for government.

UNEP strongly encourages submission of any information about cleaner production as described above. Information input forms are located in Appendix F.

Please submit information to:

ICPIC
UNEP IE/PAC
39-43 quai André Citroën
75739 Paris Cedex 15 - France
TEL: 33 (1) 44 37 14 50
TLX: 204997F
FAX: 33 (1) 44 37 14 74



ICPIC Partners

ICPIC, PIES, and OAIC all use related software, therefore their appearance is similar. Many of the operational procedures are identical also.

ICPIC shares its telephone number with two related exchange systems: UNEP IE/PAC's OzonAction Information Clearinghouse (OAIC) and U.S. EPA's Pollution Prevention Information Exchange System (PIES).

- ICPIC and PIES are sister systems that form an integrated international network on cleaner production and pollution prevention.

- OAIC is an activity of IE/PAC's OzonAction Programme, funded by the Interim Multilateral Ozone Fund of the Montreal Protocol. For more information, see Appendix B.

Any ICPIC user is free to access either of these systems after logging on to ICPIC. In fact, UNEP IE/PAC encourages you to do so since OAIC's information is relevant to many cleaner production activities.

As in the case of ICPIC, neither OAIC nor PIES require any fees or special account numbers. However, each system does require that you complete a brief on-line questionnaire the first time that your log in to the system. All three systems require separate passwords.

For more information on OAIC, contact:

OzonAction Programme
UNEP IE/PAC
Tour Mirabeau
39-43, quai André Citroën
75739 Paris Cedex 15
France

For more information on PIES, contact:

US EPA PIES
c/o SAIC
7600-A Leesburg Pike
Falls Church, Virginia 22043
USA

Notation in This User Guide

A glossary of computer terminology used in this guide is contained in Appendix C.

The following symbols are used throughout this manual:

< > or ( )
These symbols instruct you to hit the key listed between the brackets (e.g., <return> = hit the "return" key, <Ctrl X> = hit the "control" and "X" keys simultaneously.

<return> or (Enter) or (ENTER)
These symbols instruct you to select the "return" or "enter" key on your keyboard; they are interchangeable. The ICPIC comprises several software components that use these different user input symbols in their menu screens.

The following abbreviations are used throughout this user guide:

Abbreviation	Meaning
ICPIC	International Cleaner Production Information Clearinghouse
IE/PAC	UNEP's Industry and Environment Programme Activity Centre
OAIC	OzonAction Information Clearinghouse
PC	Personal Computer
PIES	U.S. EPA's Pollution Prevention Information Exchange System
PSN	Packet Switching Network
PTT	Public Telephone and Telegraph Service
SYSOP	The ICPIC system operator
UNEP	United Nations Environment Programme
U.S. EPA	United States Environmental Protection Agency

Who Is an Eligible ICPIC Participant?

Becoming an ICPIC Participant

In many countries, ICPIC can be accessed through local call to your country's packet switching network. For more information, see "Getting Started" and Appendix D.

ICPIC is accessible to anyone with a personal computer, a modem, communication software and access to a public telephone line. You can register via computer the first time you use ICPIC. By following the registration process in this user guide, you will enter your own unique password and fill out a short on-line registration form, which will then give you access to ICPIC. ICPIC can be accessed by anyone using any of the methods listed in this user guide. There is no *direct* cost to use ICPIC such as user fees or on-line charges, however, the user will incur *indirect* costs when accessing the system, specifically the communication costs of calling via international telephone line or national packet switching network.

Availability

ICPIC is available **24 hours a day**. Presently, 11 users can communicate with the system simultaneously (3 via regular telephone lines, 8 via packet switching networks). UNEP IE/PAC will increase the number of access lines as usership increases.

II - Getting Started

Equipment and Other Items Needed

Equipment

- personal computer (IBM® PC or compatible, Apple® computer, or teletype terminal). There are no memory capacity requirements;
- modem (any brand that is compatible with your country's electrical supply and telephone system. Modem speed can be 1200, 2400 or 9600 baud); and
- communication software required to operate the modem (any brand that is compatible with your computer, modem, and national telephone system). Examples include CrossTalk™, Kermit™, PROCOMM™, and Qmodem™.

Utilities

- electrical outlets for the PC and modem described above. The PC and modem must be able to operate on your country's electrical supply; and
- access to a telephone line that can call outside your country.

Optional items

- a printer that is compatible with your PC, so that you can print information from ICPIC.

Communication Settings Required

Accessing ICPIC via a Regular Telephone Line:
The following communication software settings are required if you are calling ICPIC on a regular telephone line:

TELEPHONE NUMBER:	**(33) 1-45-79-40-59**
SPEED:	**1200, 2400 or 9600**
DATA BITS:	**8**
PARITY:	**None**
STOP BITS:	**1**

If you are calling from within France, you may omit the country code (33). If you are calling from within Paris, you may omit the city code (1). If your telephone system requires the use of a (0) or other number to obtain an outside line, enter that number before the ICPIC number.

If your telephone system requires a code to obtain an international line, enter those numbers before the ICPIC number.

Additional steps may be needed if you are accessing ICPIC through a local area network (LAN) — consult your organization's computer support personnel if you have such a system.

SprintNet℠ is a commercial data service not affiliated with UNEP or the U.S. EPA. SprintNet℠ was formerly called TeleNet™.

Accessing ICPIC via SprintNet℠:
SprintNet℠ is a subscription data network service that enables you to access data bases and other networks throughout the world. If you subscribe to this service—or a national packet switching network (PSN) that can gateway (i.e., connect electronically) to SprintNet℠ —you can access ICPIC by following the procedures listed below.

This capability allows individuals who have access to SprintNet℠ or a national PSN to connect to ICPIC using only a local phone call, potentially saving them costs as compared to regular international telephone charges.

If you are accessing ICPIC using a local call to SprintNet℠, you will need to complete the following steps:

1. Set your communication parameters to:
   Data Bits: 8
   Parity: None
   Stop Bits: 1
2. Set your **baud rate** to **1200** or **2400** (depending upon the capability of your modem and the speed supported by your local SprintNet℠ station)
3. **Dial your local SprintNet℠ access number** (e.g., 973-1030 for London, England)
4. Once your PC connects with SprintNet℠, type the following:
   If you are using 1200 baud: D<return>
   If you are using 2400 baud: @D<return>
5. SprintNet℠ will then ask you to specify a terminal identifier.
   If you are using an IBM® PC-equivalent terminal, type: <return>
6. At the system prompt ("@"), type the ICPIC access code: **76200604.**
7. SprintNet℠ will then ask you to type your personal **SprintNet℠ password**
8. You should now see the initial ICPIC screen. Proceed with the log on procedures described in the next section of this guide.

For a list of terminal types supported by SprintNet℠, contact SprintNet℠ at:
U.S. Sprint/User Support
12490 Sunrise Valley Drive
Reston, Virginia 22096
Tel: 1-800-835-3638
Telex: 7400944 INTL UC
Fax: 703-689-5177

You may aslo contact ICPIC for a list of SprintNet℠ representatives around the world.

To determine whether or not your country has a PSN that can gateway to SprintNet℠, refer to Appendix D.

Accessing ICPIC via Another Packet Switching Network
If you are connecting to ICPIC using a local call to a PSN that has

a gateway to SprintNet℠, you will need to adjust your communication software to the settings required by your PSN. As an example, a user in London, England, can connect to one of the PSNs available in Great Britain—Dialplus™ (British Telecom Network)—and then access ICPIC.

1. Set your communication parameters to:
   Data Bits: **7**
   Parity: **Even**
   Stop Bits: **1**

Again, it is important to note that there parameter settings depend on the requirements of your PSN.

2. Set your **baud rate** to **1200 or 2400** (depending upon the speed of your modem and the requirement of your PSN).
3. **Dial your PSN access number** (e.g., 071-490-2200 for the Dialplus™ system in England).
4. Once your PC connects with your PSN, follow the log on procedures to set your terminal emulation and baud rate (as required by your PSN).

"3110" tells your PSN to connect to SprintNet℠. "76200604" tells the SprintNet℠ to then connect to ICPIC.

5. **Follow the PSN's procedure to gateway to another network**. When the system prompts you for the access code of the network you wish to connect with, type the SprintNet℠ code that gives you access to ICPIC: **311076200604**
6. The PSN may or may not ask you for a password (depending upon the requirements of your PSN).
7. You should now see the initial ICPIC screen. Proceed with the log on procedures described in the next section of this guide.

Making International Telephone Calls

Procedures for direct-dial international telephone calls differ among countries. Before entering the ICPIC telephone number, you may have to enter one or more of the following:

- A number to obtain connection outside your building (e.g. 0)
- International access code (e.g., from the U.S., it is 011)
- Country code and city code (33 and 1 if you are calling from outside France or Paris respectively)

Example: Calling from the United States, enter
011-33-1-45-79-40-59

Note: If you are not able to access a PSN in your area or make a direct-dial international call from your location, you will not be able to access ICPIC. To obtain information contained in ICPIC, write or call the contacts listed in the "ICPIC User Support" section.

How to Set Communication Parameters

For those unfamiliar with communications software, an example is provided below using CrossTalk XVI™ (version 3.61) on an IBM® compatible PC. For examples using other common communications software packages (including Macintosh® software), see Appendix E. This example assumes that CrossTalk™ is already correctly loaded onto your PC in the directory C:\XTALK.

DOS refers to "Disk Operating System," which is the system software used in the IBM® PC family of computers and their compatibles.

Example:

Step 1: Getting into the CrossTalk™ directory from DOS

```
User Command: CD \XTALK <return>
```

Step 2: Starting CrossTalk™

```
User Command: XTALK <return>
```

Step 3: Changing the communications settings

```
User Command: <Esc><Home>
```

Having completed step 3, you should see a status screen similar to the following:

Note that this is a sample screen, and yours may not look exactly the same.

```
---------- CROSSTALK - XVI Status Screen ---------- Off line
NAme      ICPIC                    LOaded  C:ICPIC.XTK
NUmber    40-58-88-78              CApture Off
---------- Communications parameters---------- ---------- Filter settings ----------
SPeed 2400    PArity None    DUplex  Full    DEbug Off    LFautoOff
Data  8       STop  1        EMulate None    TAbex Off    BLankexOff
POrt  1                      MOde    Call    INfilter Off OUtfiltrOn
---------- Key settings ---------- --------SEnd control setttings------
ATten   Esc      COmmand ETX (C)      CWait  None
SWitch  Home     BReak   End          LWait  None
---------------------------------------------------------------------------
Command? _
```

To change a communications parameter, type the first two letters of the parameter name at the command prompt. For example, to change the transmission speed, type "SP" at the command prompt, then select either 1200, 2400, or 9600 baud depending on the speed of your modem.

All changes made to the communications parameters will be immediately reflected on the status screen.

Step 4: Saving the communication settings

You may save the communications settings in a file to facilitate calling the system in the future. The following command records the selections in a file called "ICPIC":

```
User Command:    SA ICPIC<return>
```

Note: You only need to save these settings the first time you log onto the system. In subsequent calls, you may skip steps 3 and 4 and go directly to step 5.

Step 5: Dialing

After saving the communications settings, as shown in step 4, you may dial the system by responding as follows to the CrossTalk™ command prompt:

LO tells your system to "load" the communications settings previously saved.

```
User Command:    LO <return>
```

You should then select the number corresponding to the name of the file created in step 4, as shown in the screen below:

Note that this is a sample screen and yours may not look exactly the same.

```
Available command files

1) NEWUSER      2) SETUP      3) STD      4) ICPIC

Enter number for file to use (1-4): 4
```

After entering the correct number, you will hear the modem dialing the system and then a high-pitched carrier signal indicating connection with ICPIC.

The next section describes how to log on and register with ICPIC.

III - Logging On and Off ICPIC

Logging On

A busy signal indicates that all 11 lines are currently being used. Please wait a few moments and try again.

If you connect and see garbled language on the screen (resulting from a bad connection), hang up by typing the <escape> key and then typing "BYE" or "QUIT." Then type <return> to try calling again.

Step 1: Enter system and select ICPIC.
After connecting with the system, the following message will appear on your screen:

Computer:	FrontDoor 2.10; OX000019 Press <Esc> twice for ICPIC/OAIC
User Response:	<Esc><Esc>
Computer:	ICPIC/OAIC is being loaded

The following menu will be displayed:

UNITED NATIONS ENVIRONMENT PROGRAMME
INDUSTRY AND ENVIRONMENT PROGRAMME ACTIVITY CENTRE

Enter:	1	Cleaner Production Information (ICPIC -and- PIES)
Enter:	2	OzonAction Information Clearinghouse (OAIC)

Enter 0 To Exit

This screen allows you to choose between several environmental data systems that share the same telephone access number (see "Other Information Systems").

Computer:	Enter Choice (1-2, 0 or Q to Quit):
User Response:	1<return>

Type "1" and the following menu will be displayed:

UNITED NATIONS ENVIRONMENT PROGRAMME
INDUSTRY AND ENVIRONMENT PROGRAMME ACTIVITY CENTRE

Enter:	1	International Cleaner Production Information Clearinghouse (ICPIC)
Enter:	2	Pollution Prevention Information Exchange System (PIES)

Enter 0 to Exit

This menu allows you to choose between ICPIC and PIES. Type "1" to enter ICPIC. The following menu will appear:

Welcome to the
INTERNATIONAL CLEANER PRODUCTION INFORMATION CLEARINGHOUSE (ICPIC)

For information on UNEP's Cleaner Production Programme and ICPIC, select from the categories below, or enter "0" to proceed directly to the ICPIC system:

1... What is Cleaner Production
2... UNEP IE/PAC Cleaner Production Programme
3... What is Available on ICPIC

Choose topics 1-3, or enter 0 to proceed to the ICPIC main menu

If you do not wish to access this introductory information, type "0" to proceed with logging onto ICPIC.

Step 2: Responding to the initial welcome

After connecting with ICPIC, the following message will appear:

A busy signal indicates that all 11 lines are currently being used. Please wait a few moments and try again.

If you connect and see garbled language on the screen (resulting from a bad connection), hang up by typing the <escape> key and then typing "BYE" or "QUIT". Then type <return> to try calling again.

Welcome to the
International Cleaner Production Information Clearinghouse (ICPIC)

operated by:

United Nations Environment Programme (UNEP)
Industry and Environment Programme Activity Centre (IE/PAC)
Tour Mirabeau
39-43, quai Andre Citroen
75739 Paris CEDEX 15, France

in co-operation with:

The US Environmental Protection Agency (U.S. EPA)

The system will request your first and last names. All users must type their names now. Only one name can be entered for each unless a hyphen is used. Follow this example for "Jack Scrumpy":

Computer:	Enter your first name?
User Response:	JACK <return>

Computer:	Enter your last name?
User Response:	SCRUMPY<return>

If you are a new user and have not received a user password, go to step 3. If you have previously registered with ICPIC, type your password at the next prompt. You will then see the screens described later in this section in "Introductory Screens."

Step 3: Registering as a new user

This step initiates the registration process, as the user types the appropriate command:

Computer:	JACK SCRUMPY not found in USER's file (C) = Continue, (R) = Re-enter name?
User Response:	C <return>

Step 4: Entering new user information

A new user screen will appear with the latest news about the system. You will be asked to complete the questionnaire below. After providing the requested information, you will have complete access to ICPIC.

Registration

Computer:	Hit (Enter) to register on ICPIC or (N) to logoff?
User Response:	<return>

Password Selection

Type any single word (12 characters or less) that you will easily remember.

Computer:	Create a personal password?
User Response:	PREVENTION<return>

Remember your password! You will need to use it each time you log onto ICPIC.

Computer:	Re-enter password to verify?
User Response:	PREVENTION<return>

City and Country

Type your city, province or state, and country.

Computer:	City (Province/State) & Country?
User Response:	Paris, France <return>

Telephone Numbers

Type your business commercial area code and phone number.

Computer:	Telephone number (with country code)?
User Response:	33-1-44371450<return>

Type your business facsimile (fax) telephone number (required). If you do not have a fax line, type your commercial telephone number again.

Computer:	FAX number (with country code)?
User Response:	33-1-44371474<return>

Organization Name

Type the name of your company, agency, office, or organization. Use abbreviations if more than 24 characters.

Computer:	Name of Organization?
User Response:	World Industries <return>

System Operations

The system asks you if you wish to have the screen cleared each time a message is read on the Message Centre (to reduce screen clutter).

Computer:	Clear the screen between each message?
User Response:	(Y or N) <Return>

The system asks you to specify the communication protocol you wish to set as your default (this may be changed at any time — see the discussion of file transfer protocols in "Downloading Information from ICPIC"). If you choose "none" at this time, you will have to choose a protocol when your first try to upload or download a file. The arrow indicates the current protocol.

Computer:	(A)	Ascii (Non-Binary)
	(X)	Xmodem (Checksum)
	(C)	Xmodem-CRC (CRC)
	(O)	1K-Xmodem (PCBoard Ymodem)
	(Y)	Ymodem
	(Z)	Zmodem (DSZ)
=>	(N)	None
	Default Protocol Desired (Enter)=no change?	
User Response:	(Communication protocol of your choice) <return>	

Mailing Address

Type your organization's complete mailing address. Be sure to include street, room number, city, town, province or state, postal code, and country.

Computer:	Please enter your complete mailing address (three lines will be provided)
User Response:	39-43 Quai Andre Citroen <return>

Computer:	Additional mailing information (line 2)...(or enter "done" to continue)
User Response:	75739 Paris Cedex 15, France <return>

Computer:	Additional mailing information (line 3)...(or enter "done" to continue)
User Response:	done <return>

User Category

The system asks you to classify yourself according to the categories listed here, or you can specify your own category.

Computer:

Please enter your ICPIC "User Category" from the list below:

INDUSTRY	——>	for Industry users
ACADEMIA	——>	for any University/other academia users
UN	——>	for any United Nations Organization
GOVERNMENT	——>	for Government Agency, Intergovernmental organizations (OECD, EEC)
NGO	——>	for Public Interest Groups, non-governmental organizations
CONSULTANT	——>	for consulting firm users
OTHER	——>	for any other user groups (pls. specify)

User Response: INDUSTRY<return>

How You Heard About ICPIC

ICPIC would like to know how you learned about the system (e.g., at a conference, through a newsletter or journal, or through another bulletin board). Please be as specific as possible — ICPIC uses this information to develop its outreach efforts.

Computer: Please describe how you heard about ICPIC.

User Response: UNEP's Cleaner Production Newsletter, Fall 1992 <return>

Saving Your Registration Information

The computer will automatically update the system with your user information and password.

Computer: Registration information saved.

Introductory Screens

Next, ICPIC will display the system's introduction screen. After displaying this screen, the system will give you the option of scanning the message centres for any messages that have been left for you since the last time you logged on ICPIC.

Computer: Scan Message Base Since 'Last Read' (Enter)=yes?

User Response: <return>

If you decide to interrupt this scan, the system gives you the option to stop or suspend at any time.

Computer: (Ctrl-K) or (Ctrl-X) Aborts, (Ctrl-S) Suspends.

User Response: <Ctrl-X>

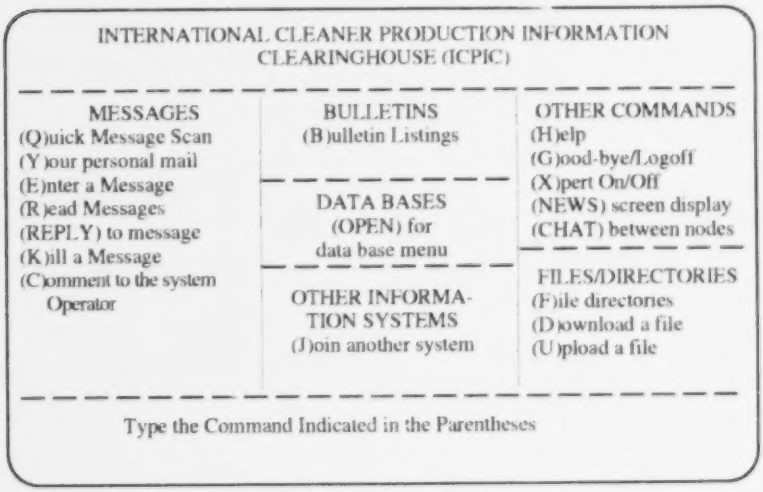
Logging Off ICPIC

At any time during your use of ICPIC, you may quit the session and log off. To exit ICPIC, type "G" (for "goodbye") at the Main Menu prompt. To exit from your communication software (e.g., Crosstalk™), type the <escape> key and type "QUIT".

IV - ICPIC Commands

Main Menu and Command Options

The Main Menu screen that greets you after logging on is divided into groups of related commands.



Command Syntax

Most commands are entered as one letter followed by <return>. Some commands (i.e., OPEN, CHAT, NEWS, and REPLY) require that you enter an entire word. In some cases, you may also string secondary commands.

Example: Entering "B" will generate a list of available bulletins to read. You must then enter "1" to view Bulletin number 1.

or

Entering "B 1" will display Bulletin number 1 on the screen.

The following table lists each of the Main Menu commands.

Command Summary Table

Command	Description

General Commands:

H — **H**elp - displays information about each of the available commands.
User Command: H "command letter" <return>

G — **G**oodbye - ends the ICPIC session and hangs up.
User Command: G <return>

Bulletin and Data Base Commands:

B — **B**ulletin Listings - lists bulletins available and allows you to view them.
User Command: B <return> - displays bulletin list
B 1 <return> - displays Bulletin number 1

OPEN — **OPEN** Data Bases - lists data bases available and allows you to view them.
User Command: OPEN <return>
OPEN 1 <return>

Message Center Commands:

E — **E**nter a Message - directs a message to another or all ICPIC user(s).
User Command: E <return>

R — **R**ead Messages - allows you to display, delete, or respond to messages.
User Command: R <return>

Y — **Y**our Personal Mail - scans your incoming and outgoing messages, starting from most recent to the oldest.
User Command: Y <return>
Y S <return> - scans messages since you last logged on.

Q — **Q**uick Message Scan - displays message header information for all public messages (including number, reference, author, and subject).
User Command: Q <return>

Command Summary Table (Continued)

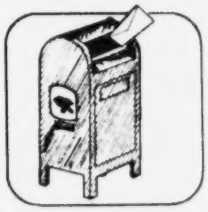
Command	Description
REPLY	**Reply** to Messages - allows you to respond to a message left by another user. User Command: REPLY "message number" <return> or RE immediately after reading a mesage
C	**C**omment to UNEP IE/PAC - enters a private message to the ICPIC system operator. User Command: C <return>
K	**K**ill a Message - enables you to delete a message you have previously entered. (Use this to delete unimportant, nontechnical messages.) User Command: K "message number" <return>
File Transfer Commands	
F	**F**ile Directories - lists all files available for downloading. User Command: F <return>
D	**D**ownload a File - requests that ICPIC begin transmitting a file to your computer over the telephone wires. User Command: D "filename" <return>
U	**U**pload a File - instructs ICPIC to begin receiving a file from your computer over the telephone wires. User Command: U "filename" <return>
System Commands	
X	E**X**pert On/Off - activates/disables display of command menu(s). User Command: X <return> - disables when active, activates when disabled
NEWS	Display **News** - redisplays the introductory bulletin that greets you when logging on to ICPIC.
CHAT	**Chat** Between Nodes - when you enter this command, all other users currently logged on to ICPIC are sent the message: "(Your Name) is available for chat." If the other users wish to communicate with you, they must also type "CHAT". Once two or more people are chatting, ICPIC becomes a real-time forum for discussions of cleaner production issues.

Files are uploaded and downloaded in ASCII format and are easily converted to a word processing format.

Command Summary Table (Continued)

Command	Description
Other Information Systems Commands	
J	Join Another Information System - brings you into the menu of ICPIC associated information systems. User Command: J <return>

V - ICPIC Message Centre



The message centre is one mechanism of ICPIC that allows you to "network" with an array of users from cleaner production programmes at the international, national, and local government levels; academia; industry and trade associations; public/private institutes; and public interest groups.

Description of the Message Centre

The message centre is your means of communication with other users. You may direct your messages to:

- Individual users
- UNEP and system operators
- The entire ICPIC user network, including any user of U.S. EPA's PIES network.

You may ask questions, respond to questions, and otherwise share information and ideas about cleaner production with the user community.

For example, you may announce an upcoming event not listed on the Calendar of Events or update other portions of ICPIC; discuss research and development projects; establish cooperative efforts; and benefit from the experience of others in technical, programme, and policy efforts.

If you can contribute from your own experience by posting additional answers to questions or offering different approaches, please do so. The more you participate, the stronger you make ICPIC.

UNEP IE/PAC staff monitor and respond to messages daily.

Accessing the Message Centre

The message centre can be accessed through the ICPIC Main Menu.

The ICPIC Main Menu contains seven message centre commands:

(Q) = Quick message scan
(Y) = Check your personal mail
(E) = Enter a message for any user
(R) = Read messages
(K) = Kill a message
(REPLY) = Reply to message(s) left by other users
(C) = Comment to UNEP IE/PAC staff or the ICPIC SYSOP

Some of these commands have subcommands that can be viewed by typing (H) for help, once you have typed the main command. The message centre main commands are explained below.

Quick Message Scan

You may view a quick description of all public messages (and private messages that are to or from you) by typing "Q" at the Main Menu. The following subcommands may be used with "Q" (to view these options on the screen, type "H"):

(Q)uick Message Scan - Function Help

Subcommands: (#) (F) (Y) (S) (NS) (+) (-) (TS)

(#) any Number from 1 to 9,999,999
(F) scans for message headers from you
(Y) scans for message headers to you
(S) scans for headers above those you have already read
(NS) displays test in non-stop mode
(+) or (-) appended to the end of a (#) forces the display to search in forward or reverse order, respectively.
(TS) searches message headers for specific text
(USER) selects only those message to or from the specified user

Description: Allows viewing a quick description of the message header information available. The display includes the message number, the message reference number (if any), who the message is to, who the message is from, and the subject matter of the message. Due to screen width constraints, some fields are shortened for display purposes. Messages which are protected from reading will not be displayed to you.

Computer:	(H)elp, (1-350), Message Scan Command?
User:	1 <return>

All message headings starting from number 1 will be displayed.

If you want to scan messages from #320, type 320 instead of 1 and all message headings starting from number 320 will be displayed

Msg#	Ref#	To	From	Subject
1		ALL	BARCLAY INGE	DISK DRIVES
2		BARCLAY INGE	TRAVIS WETTROTH	AQUEOUS REPLACEMNT
3		BARCLAY INGE	SARAH NDUGU	ULTRASONIC SYSTEM
4		BARCLAY INGE	TOMMY VU	SEMI-AQUEOUS OPTION

Checking Your Messages

You may check messages left to you or from you by typing a "Y" at the Main Menu. Messages are displayed from the newest to the oldest. To read messages left for you quickly, you may string together several commands at once (separated by a blank space). For example, if you type "Y S" at the Main Menu the system will show all of (y)our messages (s)ince you last checked them.

Entering a Message

To enter a message on ICPIC, type "E" at the Main Menu. The computer will then ask to whom you would like to send the message:

If the name you enter is spelled wrong or if that person is not recognized as a user, you will be asked to re-enter the name. The system is sensitive to spelling and punctuation, but not to upper- or lower-case letters.

Computer:	To (Enter) = 'ALL'?
User Response:	Joseph Conrad <return>

After you have entered the name of the addressee, the computer will ask for a subject heading of up to 25 characters:

If ICPIC does not recognize the name that you have entered, it will give you the option of conducting a "soundex search". This feature matches the sound of your entry with similar-sounding user names. This is particularly useful if you are uncertain of the exact spelling of the addressee's name.

Computer:	Subject (Enter) = abort?
User Response:	Process audits <return>

You will then be given the option of making your message public for all users or making it private so that just the addressee(s) can read it. To see the message security options, type "H" when prompted:

Computer Screen:	Message Security (H)=help?
User Response:	H <return>

The following screen uses all of the available subcommands:

Message Security - Function Help

Subcommands: (G) (R) (S) (N)

(N)one means that the message will be open for all to read.

(G)roup allows assigning a password to the message which only other callers who know the common password will be allowed to read the message.

(R)eceiver makes the message private to all except you—the person leaving it—and the person to whom it is addressed.

(S)ender allows you to assign a password to the message so that only you can kill it later. This prevents the other person to whom the message is addressed from killing it.

Description: When leaving a message to another person various security levels are available to allow "protecting" of your message to insure only those who you want to read it can.

Note that you can NOT assign (R)eceiver protection to a message which has been addressed to ALL.

If the message contents would be valuable to other users, select "(N)one" so that anyone can read it. At the Message Security prompt type "N" or <return> to make the message available to "ALL" users.

Computer:	Message Security (H)=help?
User Response:	<return>

Line Editor vs. Full-Screen Editor

The ICPIC message centre gives you the option of entering a message using a standard line editor or a full-screen editor. The differences between these features are outlined below:

Line Editor:

- The editor accepts one line of text at a time, placing new lines below old lines until your message is complete.
- If the message has enough lines, it will scroll off the screen and you will not be able to view the entire message at the same time.
- The ability to go back and make corrections is awkward; it requires selecting the line number you wish to edit and re-typing the correction as follows: "old text;new text".
- **This editor requires no special terminal emulation.**

Full-Screen Editor:

- The editor offers you the ability to view the entire message on the screen at one time.

Your communication software has a parameter called "terminal emulation," which controls the movement of your screen cursor when you are connected to a remote bulletin board service. You control your terminal emulation as part of your initial modem setup prior to calling ICPIC. Consult your software guide on how to change this to ANSI.

- The editor gives you the ability to move the cursor backwards and forwards through the entire message, comparable to the way a word processor functions.

- To control the cursor, you must know the cursor control keys (listed below in "Full-Screen Editor Selection").

- **THIS EDITOR REQUIRES THE ANSI TERMINAL EMULATION —NO OTHER TERMINAL EMULATION WILL WORK.** If you do not have your communication software set to the ANSI parameter prior to calling ICPIC, you will encounter garbled characters when attempting to use the full-screen editor. If your communication software supports ANSI and you wish to use the ICPIC full-screen editor, log off the system, change your software to the ANSI parameter, and log back on.

You will be prompted to choose between these two editors after you select your message's security status:

Computer:	Subject (Enter)=abort? Halon 1211 recycling Message Security (H)=help? <return> Use Full Screen Editor?
User Response:	Y <return>

Line Editor Selection:
If you select "N", you will access the standard line editor. You will be provided with up to 99 lines to write your message:

Up to 72 characters per line are allowed. Typing beyond the 72–character limit will cause your text automatically to "word-wrap" down to the next line.

Computer:	Enter your text. Enter a blank line to end.
User Response:	Joseph - I would like more information about the process audit system you are testing...

When you are done typing your message, type <return> twice. You will be given a choice of the following options:

You may make corrections on the line the cursor is on; to make corrections on previous lines use the "(E)dit" command.

You must type "S <return>" at the "Text Entry Command?" prompt to save (and send) the message.

Computer:	A)brt, C)ont, D)el, E)dit, F)ullScr, H)elp, I)nsert, L)ist, Q)uote, S)ave, U)pldMsg Text Entry Command?
User Response:	H <return>

User Options:
Message Completion Subcommands

(A)brt abandons or cancels your message entry.
(C)ont allows you to continue using the Line Editor.
(D)el allows you to delete a line of text from the message.
(F)ull allows you to continue using the Full Screen Editor.
(H)elp displays this Help file.
(I)nsert allows inserting a line of text in front of another.
(L)ist relists your text entry so far to the screen.
(Q)uote allows you to quote a portion of the replied-to message.
(S)ave actually writes the message to di k.
(U)pld allows you to upload ASCII text without echo.
(SC) allows saving the same message to another individual.
(SK) save your message, kill replied to message (if applicable)
(SN) save your message, skip redisplay of replied to message

Note: The format to (E)dit a line of text is:
old text;new text

Where the "old text" is the text you wish to replace, followed by a ";" followed by the new text. The old text search is case sensitive, so capital letters must match exactly. If your new text causes that line to exceed 72 characters, the characters beyond 72 will be truncated from the line.

When "uploading" Ascii text to the message base, insure your text lines are 72 characters or less in length.

Note: while in the full screen editor you can press CTRL-Z to get help on the editing keys available in the full screen editor.

If you are not satisfied with your message as written, you can either (e)dit or (a)bort it. If you are satisfied with the message, type "S" and then <return> to save and send it.

Full-Screen Editor Selection:

If you have correctly set your communication software to the ANSI parameter prior to logging on ICPIC, select "Y" or simply <return> when the system asks you to make the editor selection. You will see a screen similar to this:

Note that this sample screen illustrates a message that has just been written using the full-screen editor.

```
To: JOSEPH CONRAD                Subj: PROCESS AUDIT SYSTEM
1: Joseph - I would like more information about the process audit
2: system you are testing for the aviation industry. Please leave me
3: a message on this system—I would like to exchange information
4: with you on this subject.
5:          —Jack Scrumpy
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:
16:
17:
18:
19:
20:
Press (Crtl-U) for SEND/ABORT  (Ctrl-Z) = Help  (Ins/Ctrl-V) Mode = Insert
```

If you need help, type <Ctrl-Z>. The system will then display the full-screen cursor control keys and other help items:

Full Screen Editor - Keyboard Help

To use PCBoard's full screen editor you need to familiarize yourself with the functions listed below utilizing the PC's keyboard (or control sequences in case your system does not support the PC's specialized keyboard):

Cursor Movement	PC Board	Control Keys	ANSI codes
Move Left a Character	Left Arrow	Ctrl-S	ESC[D
Move Right a Character	Right Arrow	Ctrl-D	ESC[C
Move Left to Previous Word	Ctrl-Left Arrow	Ctrl-A	
Move Right to Next Word	Ctrl-Right Arrow	Ctrl-F	
Move To Next Tab Stop	Tab Key	Ctrl-I	
Move To Start of Line	Home Key	Ctrl-W	ESC[H
Move To End of Line	End Key	Ctrl-P	ESC[K
Move Up a Line	Up Arrow	Ctrl-E	ESC[A
Move Down a Line	Down Arrow	Ctrl-X	ESC[B
Move Up a Page	PgUp Key	Ctrl-R	
Move Down a Page	PgDn Key	Ctrl-C	

Edit Function	PC Keyboard	Control Keys
Toggle Insert Mode	Ins Key	Ctrl-V
Reformat Paragraph	Ctrl-B	Ctrl-B
Join a Line	Ctrl-J	Ctrl-J
Insert a Line	Ctrl-N	Ctrl-N
Delete a Line	Ctrl-Y	Ctrl-Y
Delete to End of Line	Ctrl-End	Ctrl-K
Delete Char	Del Key	Ctrl-G
Delete Char to the Left	Backspace	Ctrl-H
Delete Word to the Right	Ctrl-T	Ctrl-T

Special Functions	PC Keyboard	Control Keys
Exit Full Screen Editor	ESC	Ctrl-U
Redisplay Screen	Ctrl-L	Ctrl-L
Quote or List Original	Ctrl-O	Ctrl-O or Ctrl-Q

Using the above keystrokes

All systems should be able to use the Control Key method of performing the above functions (press and hold the CTRL key while typing the letter key that follows it in the above table).

The more familiar PC Keyboard keys, such as the arrow keys, will work while on locally. They will also work if your communications programme is capable of either sending the actual keystroke (keyboard scan code) or ANSI escape code equivalent through to the host system.

An example would be calling in from remote using Qmodem to connect to PCBoard and utilizing either the 'Doorway Mode' or the 'Keyboard Emulation' in Qmodem so that keystrokes are passed directly on to PCBoard.

The ANSI escape codes are an alternate means of telling PCBoard to move the cursor around on the screen. Qmodem's "Keyboard Emulation" feature makes use of these ANSI codes without the need for Doorway Mode. Other comm packages may be able to programme the ANSI escape codes into function keys.

Insert Mode

While in 'Insert Mode' it should be noted that characters to the right of the cursor will be pushed one character to the right as each letter is typed.

Additionally, pressing the (Enter) key while in Insert Mode will cause a new line to be inserted.

NON-PC KEYBOARD USERS PLEASE NOTE!

Some modems and packet switch environments will filter out CTRL-S keystrokes and interpret them to mean "stop sending data". In these environments pressing CTRL-S will not move the cursor as expected - in fact it will appear to do nothing. You will need to press CTRL-Q to get going again.

You can work around this by using CTRL-A which means move left to previous WORD rather than moving a character to the left.

Those of you who can send either an ESC[D or the PC scan code for the Left Arrow will not encounter this problem and will never have to worry about it.

After you enter your message, you can send it by typing <escape> or <Ctrl-U> and following the same commands listed above in "Line Editor Selection".

Computer:	A)brt, C)ont, D)el, E)dit, F)ullScr, H)elp, I)nsert, L)ist, Q)uote, S)ave, U)pldMsg Text Entry Command?
User:	S<return>
Computer:	Saving Message Number 83

Full-Screen Editor Troubleshooting

If you have not preset your communication software to the ANSI terminal emulation, you will see garbled or unintelligible characters after the "Use Full-Screen Editor?" prompt:

Note the "[K" and other seemingly random characters on this sample screen that indicate the user has incorrectly set his/her terminal emulation.

```
To (Enter)='ALL'? Joseph Conrad
Subject (Enter)=abort? Process audit
Message Security (H)=help? N
Use Full Screen Editor? Y

[2J [H          To: JOSEPH CONRAD       Subj: PROCESS AUDIT
(_____ _____)
[3;1H  1: [K
2:  [K
2:  [K
3:  [K
4:  [K
5:  [K
...

[24;8HPress (Esc) or (Ctrl-U) to Exit, (Ctrl-Z) for Help [24;48H[K
```

If you find yourself in this situation, type <Ctrl-U> or <Esc> to escape to the message option menu:

```
Computer:  [24;8HPress (Esc) or (Ctrl-U) to Exit, (Ctrl-Z) for Help [24;48H[K

User Response: <Ctrl  U> <return>
```

Next, select "A" to abort the message:

```
Computer:  [K(A), (C), (D), (E), (F), (H), (I), (L), (Q), (S), (U), (SK), (SN), (SC)?

User Response: A <return>
```

You will then return to the Main Menu. If you have further difficulty with the "(E)nter a Message" command, type "E H" at the Main Menu:

```
(E)nter a Message - Function Help
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Subcommands:  NONE
Description:  Allows leaving a message to another person for them to read at a later
date.

Full Screen Editor:
    After selecting (E), you will be asked if you want to use the Full Screen Editor.
    To use the Full Screen Editor your software must be capable of interpreting
    ANSI  cursor position commands. The default answer to the question will be NO
    if the system did not detect ANSI on your end or if you are in novice mode.

Addressing the Message:
    Then you will be prompted to enter the name  of the person the message is being
    addressed to. If the system operator has enabled message name verification on
    this system, the name entered will be checked against all names in the user's file
    to insure a proper match. If the user's name is not found, or the user is not
    registered  conference or board area where the message is being left, you will be
```

advised of such to avoid leaving a message to a non-existent individual. However, a SOUNDEX search to located a name that sounds like what you entered can be performed or you can override the verification and answer (C) to continue and use the name that you have entered which might be done to facilitate leaving a message to a group of people. By not entering a user name at the "To:" prompt, it will automatically address the message to "ALL".

Brackets will be displayed either above the line or surrounding the area on the screen in which you are allowed to enter text.

Entering a Subject:

Next, up to a 25 character subject must be entered. If no subject is entered you will be returned to the main menu and command line prompt.

Message Security:

A security prompt will next appear looking something like this:
Security: (G)roup, (R)eceiver, (S)ender, (H)elp, (N)one
(N)one means that the message will be open for all to read.
(G)roup allows assigning a password to the message which only other callers who know the common password will be allowed to read the message.
(R)eceiver makes the message private to all except you - the person leaving it - and the person to whom it is addressed.
(S)ender allows you to assign a password to the message so that only you can kill it later. This prevents the other person to whom the message is addressed from killing it.

Note that you can NOT assign (R)eceiver protection to a message which has been addressed to ALL.

All Messages Private?

A message base can be set up such that all messages are initial flagged as private. In this case the above security prompt is skipped and the message will be saved using (R)eceiver security so that only you and the person to whom the message is addressed can read it.

Entering a Message:

After completing the above steps, you can enter your text. Each line you enter will be preceded by its line number. Up to 72 characters per line is allowed. Typing beyond the 72 character limit will cause your text to automatically "word-wrap" down to the next line.

Exiting the Editor:

There are two modes in which text can be entered which you will have already chosen by the time you get to the editor. One of them is the Line Editor mode where only one line at a time can be entered or edited and the other is Full Screen Editor mode in which the entire screen is used as the workspace for message entry.

To exit the Line Editor, press (Enter) alone on a blank line.
To exit the Full Screen Editor, press (ESC) or (Ctrl-U).

Reading a Message

You may read any message addressed to you or to "ALL" users by typing "R" at the Main Menu. Once you have chosen "R," you may select any of the following subcommands (to view these options on your screen, type "H"):

(R)ead Messages - Function Help

Subcommands:

(#)	a message number between 1 and 9,999,999
(F)	selects only messages left by you
(Y)	selects only messages left for you
(YA)	selects only messages left for you or addressed to "ALL"
(S)	selects messages above the last one you have read
(A)	read messages in all SELECTed conferences
(ALL)	read messages in all conferences in which you are registered
(L)	read in backwards order from the last message to the first
(C)	capture the messages to a file for download
(D)	implies a (C)apture the messages to a file for download
(Z)	implies a (D)ownload but compresses the file before
(G)	goodbye
(J)	join another conference
(Q)	display only message headers (quick scan mode)
(U)	displays only messages that have not yet been read
(NS)	displays text in non-stop mode
(RM)	re-reads previously "memorized" message number
(RM+)	re-reads "memorized" message number plus forward read
(RM–)	re-reads "memorized" message number plus backwards read
(+)	alone reads messages forward from present position or when appended to a number causes forward reading from that message number
(–)	alone reads messages backwards from present position or when appended to a number causes backward reading from that message number
(TS)	searches message headers for specific text
(SET)	sets the number of the last message read
(EDIT)	puts the current message into the editor for re-editing
(NEXT)	reads next higher message number available
(PREV)	reads next lower message number available
(JUMP)	skips to the next conference on a (R)ead (A)ll command
(SKIP)	sets the last message read pointer, skips to next conf.
(USER)	selects only those message to or from the specified user
(SELECT)	selects the current conference for future scans
(DESELECT)	deselects the current conference for future scans

Description:

Allows reading messages left on the system. All public messages will be displayed, along with private messages left either by you or for you. If a message has more display lines than what your (P)age Length is set for, a "(H)elp, More?" prompt will appear asking for your input. Multiple message numbers to read can be entered on the same command line if desired. Additionally, combinations of the above commands can be entered on the same command line if desired.

You can only view these options by typing "H" at the message read command.

To read a specific message, type its unique message number. The message will only be displayed if the sender intended it to have public access. If the message was not intended for public access, the "Sorry, no mail found to read" prompt will be displayed.

This is a "mock" message referring to fictitious companies, products, hardware, and raw materials.

Computer:	Message Read Command?
User Response:	1 <return>

Date:	11-14-92 (08:16)	Number:	1 OF 350
To:	All	Reference:	None
From:	Barclay Inge	Read:	Has Replies
Subj:	Disk Drives	Status:	Public Message
Sect:	MAIN BOARD (0)	Read Type:	GENERAL

AT ABC ELECTRONICS COMPANY IN SINGAPORE WE HAVE TRADITIONALLY USED CFC-113 IN OUR HIGH-VOLUME PRECISION CLEANING OF MAGNETIC STORAGE DISK DRIVES FOR PERSONAL COMPUTERS. THESE DRIVES HAVE A VERY SMALL TOLERANCE FOR CONTAMINATION DURING ASSEMBLY — NORMALLY THE RECORD/READ HEAD IS SPACED FROM 0.813 TO 1.143 MICRONS ABOVE THE RECORDING MEDIA SURFACE OF THE DISK SUBSTRATE. CONTAMINANTS MUST THEREFORE BE CONTROLLED AT THE SUBMICROMETER LEVEL FOR THE DRIVES TO WORK EFFECTIVELY, AND SO FAR CFC-113 HAS PROVEN QUITE EFFECTIVE.

OUR COMPANY IS EAGER TO PHASE-OUT CFC-113 IN ALL OF OUR OPERATIONS. DOES ANYONE HAVE ANY SUGGESTIONS FOR ELIMINATING THESE SUBSTANCES WHILE RETAINING OUR SAME LEVEL OF QUALITY?

(H)elp, (Enter) = Continue, (RE)=Reply, (T)=View Replies?

After reading a message, you may select any of the message read commands above or any of these additional commands:

(End of Message) Command - Function Help

Commands Available to All:

(Enter)	continues on with message read function
(N)	stop reading messages
(NS)	continue reading messages in non-stop format
(T)	thread read (forward) (or T+)
(T-)	thread read (backwards)
(#)	a specific message number between 1 and 9999999
(+)	alone reads messages forward from present position or when appended to a number causes forward reading from that message number
(–)	alone reads messages backwards from present position or when appended to a number causes backward reading from that message number
(F)	selects only messages left by you
(Y)	selects only messages left for you
(YA)	selects only messages left for you or addressed to "ALL"
(S)	selects messages above the last one you have read
(A)	read messages in all SELECTed conferences
(ALL)	read messages in all conferences in which you are registered
(L)	read in backwards order from the last message to the first
(C)	capture the messages to a file for download

(D)	implies a (C)apture the messages to a file for download
(Z)	implies a (D)ownload but compresses the file before
(G)	goodbye
(J)	join another conference
(Q)	display only message headers (quick scan mode)
(/)	redisplays the current message
(RE)	enter a reply to the message just read
(RR)	read the referenced message
(M)	memorize that message number for later return
(RM)	return to a previously "memorized" message number
(TS)	searches messages for the specified search criteria
(SET)	sets the number of the last message read
(NEXT)	reads next higher message number available
(PREV)	reads next lower message number available
(USER)	begins a search for messages to/from a specific user

Additional Commands Available if Message is To/From You:

(K)	kill the message
(E)	edit the "To:" and "Subj:" of the message header and 'Echo' flag if applicable

Important Subcommand: Thread

The (T)hread command allows you to view multiple responses to a message. If you type "T" after reading a message, all responses to it that were entered through the (RE)ply command will be displayed sequentially. If you read a message that appears to be a response to a previous message, you can view the messages it replied to sequentially by typing "T-". In the following example, the user threads through the replies to the message that was read.

Please note that if a reply is entered using the "REPLY" command at the Main Menu rather than the "RE" command at the end of a message, the message will not be included in the thread function.

Computer:	End of message command?
User Response:	T <return>

To fully utilize ICPIC as a communication network, remember to enter "RE" when you have useful information to contribute in responding to another user's question.

DATE:	11-16-92 (08:24)	NUMBER:	2 OF 350
TO:	BARCLAY INGE	REFER#:	NONE
FROM:	TOMMY VU	READ:	NO
SUBJ:	SEMI-AQUEOUS OPTION	STATUS:	PUBLIC MESSAGE
CONF:	MAIN BOARD (0)	READ TYPE:	GENERAL

IN ADDITION TO THE ALTERNATIVES MENTIONED BY THE OTHER ICPIC USERS WHO RESPONDED TO YOUR MESSAGE, HAVE YOU CONSIDERED SWITCHING FROM CFC-113 TO A SEMI-AQUEOUS CLEANER? HYDROCARBON/SURFACTANT CLEANERS, ALSO COMMONLY CALLED SEMI-AQUEOUS CLEANERS, CAN OFTEN SUBSTITUTE FOR BOTH CFC-113 AND 1,1,1-TRICHLOROETHANE IN PRECISION CLEANING APPLICATIONS SUCH AS THE ONE YOU ARE DESCRIBING. THE POTENTIAL BENEFITS OF THESE ALTERNATIVES INCLUDE:
- GOOD CLEANING ABILITY
- COMPATIBILITY WITH MOST METALS AND PLASTICS
- SUPPRESSED VAPOUR PRESSURE (ESPECIALLY IF USED IN EMULSIFIED FORM)
- NONALKALINITY OF PROCESS PREVENTS ETCHING OF METALS, THUS HELPING TO KEEP METALS OUT OF WASTESTREAMS
- REDUCED EVAPORATIVE LOSS
- POTENTIAL DECREASE IN SOLVENT CONSUMPTION WHICH MAY LOWER OVERALL COST
- ABILITY OF SOME FORMULAS TO DECANT EASILY FROM WATER

OUR NATIONAL TECHNICAL RESEARCH INSTITUTE IS CURRENTLY TESTING AN EXPERIMENTAL AQUEOUS CLEANER CALLED KLEEN-B12 THAT COULD BE USED IN PRECISION CLEANING APPLICATIONS SUCH AS DISK DRIVE PRODUCTION. I WOULD BE HAPPY TO TALK TO YOU ABOUT THE ADVANTAGES AND DISADVANTAGES OF THIS POTENTIAL REPLACEMENT FOR YOUR FACILITY.

(H)elp, (Enter) = Continue, (RE)=Reply, (T)=View Replies?

Replying to a Message

This command enables you to respond to a message left by another user. You can reply directly to a message after you have read it.

This is a "mock" message referring to fictitious companies, products, hardware, raw materials, and reference documents.

DATE:	10-21-91 (08:24)	NUMBER:	2 OF 36
TO:	ALL	REFER#:	NONE
FROM:	KATHRYN GAVAGHAN	READ:	N/A
SUBJ:	SOLVENT SUBSTITUTION	STATUS:	PUBLIC MESSAGE
CONF:	MAIN BOARD (0)	READ TYPE:	GENERAL

DOES ANYONE KNOW OF AN EFFECTIVE, LOW-VOLATILITY SUBSTITUTE FOR AIRCRAFT PAINT STRIPPING SOLVENT?

(H)elp, (Enter) = Continue, (RE)=Reply, (T)=View Replies?

Note that this feature is also available directly from the Main Menu using the "REPLY" command. However, the Main Menu command requires that you know the message number beforehand, and it does not permit thread searches of the messages.

Computer:	End of message command?
User Response:	RE <return>

The system will then accept your message:

KATHRYN: ACME PAINT REMOVAL, LTD. HAS DEVELOPED AN AIR BLASTING PAINT STRIPPING METHOD THAT USES RECYCLABLE PLASTIC PARTICLES AS THE BLAST MEDIA. CONTACT ME FOR MORE INFORMATION.

After your reply has been entered, the addressee will be notified that she or he has a message waiting.

Commenting to UNEP IE/PAC

This command allows you to leave private messages or comments to the ICPIC system operator (called "SYSOP" for short) or to other UNEP IE/PAC staff. Comments can include questions on the use and contents of ICPIC, how to upload or download files, or any computer hardware/software related topics. Technical and policy related questions on any facet of cleaner production should be left to "ALL" on the message centre to benefit from the expertise of your peers. For further information on user assistance, see the "ICPIC User Support" section in the back of this user guide.

ICPIC - PIES Message Centre Link

The main message centres of UNEP's ICPIC and U.S. EPA's PIES are electronically linked each night. Messages from one system are automatically transferred to the other, enabling ICPIC users to send messages to their counterparts using the U.S.-based system.

The ICPIC main message centre contains both messages left on ICPIC and all messages entered on ICPIC up until the time of the automatic link. This communication feature transforms two similar but discrete information systems into a truly international cleaner production network.

To send a message to any PIES user, simply enter the ICPIC main message centre and address your remarks to that individual or to "ALL" (as you would any ICPIC user you wished to contact). Your message will appear in PIES the following day.

Messages originating from the PIES will be identified by a tag at the end of the message:

"Net/Mail: U.S. EPA Pollution Prevention Information Exchange System"

DATE:	10-23-91 (11:06)	NUMBER:	2046 OF 2275
TO:	JACQ ALOISI	REFER#:	NONE
FROM:	MYLES MORSE	READ:	HAS REPLIES
SUBJ:	UNEP WORKING GROUP	STATUS:	PUBLIC MESSAGE
CONF:	MAIN BOARD (0)	READ TYPE:	GENERAL

JAQUELINE WHAT NEW WORKING GROUPS WILL BE ESTABLISHED BY UNEP? ALSO, WHAT PROGRESS HAS BEEN MADE ON UNEP'S OUTREACH ACTIVITIES TO ESTABLISH CLEANER PRODUCTION PROGRAMS IN DEVELOPING NATIONS?

Net/Mail: U.S. EPA POLLUTION PREVENTION INFORMATION EXCHANGE SYSTEM

(H)elp, (Enter) = Continue, (RE)=Reply, (T)=View Replies?

When you are entering a message on ICPIC that is addressed to a user of the PIES system, ICPIC may indicate that the addressee is not currently listed as an ICPIC user. If this happens, continue entering the addressee's name and ignore the system message (users are registered on one system at a time; therefore, the ICPIC system can't recognize PIES user names, and vice versa). Regardless of whether or not ICPIC recognizes the name as an ICPIC user, the message will be sent to the PIES user you specified.

DATE:	10-24-91 (12:53)	NUMBER:	2051 OF 2283
TO:	MYLES MORSE	REFER#:	NONE
FROM:	JACQ ALOISI	READ:	HAS REPLIES
SUBJ:	UNEP WORKING GROUP	STATUS:	PUBLIC MESSAGE
CONF:	MAIN BOARD (0)	READ TYPE:	GENERAL

THREE NEW WORKING GROUPS HAVE BEEN FORMED INCLUDING PULP AND PAPER, BIOTECHNOLOGY AND EDUCATION. A CONFERENCE TO DISCUSS DEMONSTRATION PROJECTS IN FOUR DEVELOPING NATIONS HAS BEEN SCHEDULED FOR APRIL....

(H)elp, (Enter) = Continue, (RE)=Reply, (T)=View Replies?

Deleting Old Messages

This command enables you to remove a message from the message base by entering a "K" after reading a message or entering K "message number" at the Main Menu. You can remove messages that you have entered or that have been left for you. This enables you to delete messages to which you have already received answers. Technical questions and answers should not be deleted so they can be referenced by other users.

VI - ICPIC Bulletins

Description of Bulletins

The number and contents of the bulletins will change periodically as new information is available and old information becomes outdated.

Bulletins are text files containing short articles on current cleaner production activities around the world.

Accessing Bulletins

Bulletins may be accessed at the main menu by entering the following commands:

Computer:	Main Board Command?
User Options:	B <return> - provides a list of available bulletins from which to choose (you must then enter the number of the bulletin you wish to read)
or	B "number" <return> - selects the bulletin number to view and displays it on the screen

More than one number may be listed. This is called "stringing." Example: enter "B 1 2 3" to view the three bulletins numbered one, two, and three sequentially.

Displaying the List of Bulletins

An example of how to view the list of bulletins and read a bulletin is presented in the following screens:

Computer:	Main Board Command?
User Response:	B <return>

A screen similar to the one below will appear, allowing you to select the bulletins you wish to view.

Bulletins can be downloaded directly to your PC using the filenames listed. See "Downloading Information from ICPIC" for this procedure.

INTERNATIONAL CLEANER PRODUCTION INFORMATION
- BULLETIN MENU -

Number	Contents/Description
1.	Cleaner Production News
2.	New Cleaner Production Publications
3.	ICPIC User Statistics
4.	Cleaner Products
5.	UNEP IE/PAC's Cleaner Production Programme
6.	UNEP IE/PAC's Cleaner Production Initiatives
7.	Previous Bulletins
8.	OzonAction Information Clearinghouse

Viewing a Bulletin

The following screens demonstrate how to view Bulletin Number 2: "New Cleaner Production Publications":

Computer:	(H)elp, (1-8) Bulletin List Command?
User Response:	2 <return>

BULLETIN #2 NEW CLEANER PRODUCTION PUBLICATIONS

This bulletin contains brief highlights of recent cleaner production publications, which will be added to ICPIC's General Publications Abstract data base. This bibliographic data base can be accessed by entering "open" at the main ICPIC menu, and selecting "3", which corresponds to the General Publications Abstract database.

Cleaner Production: the most effective approach to achieving improved water quality.

Information is displayed on the screen one page at a time followed by the subsequent command:

Computer:	(Enter)=More, (N)= Stop, (NS)=Scroll Non-Stop, (H)=Help?

When the system displays this prompt it means there are additional screens to be viewed. If you are reading a bulletin and you receive this prompt, you have the choice to continue reading or to return to the bulletin menu.

If you select "NS," the screens will scroll by nonstop and cannot be read in detail as they move. This function is useful when "capturing" files to disk. See the "Screen Capture" discussion in the "Downloading Information from ICPIC" section.

User Options:

<return>	-	lists the next screen of information
N <return>	-	stop reading the bulletin and return to the bulletin menu
NS <return>	-	lists all remaining information in the bulletin continuously without page breaks
H<return>	-	displays help screens for using the Bulletin feature

Here the return key was hit to proceed to the next screen:

Environmentally and economically encouraging results of experiments with four industrial firms in Sweden and the Netherlands are presented as illustrative of the multi-media benefits realized by these firms using cleaner production approaches. Recommendations are made as to what governments and industries should do to help accelerate the implementation of cleaner production throughout their organizations.

For further information, contact:

Prof. Donald Huisingh
(Enter)=More, (N)= Stop, (NS)=Scroll Non-Stop, (H)=Help?

Exiting

To exit a bulletin, enter "N" at the bulletin prompt. Then hit return at the "Bulletin List Command?" prompt to return to the Main Menu.

Comments on Bulletins

If you have any comments, questions, or additions regarding information contained in a particular bulletin, you may use the message center to record your comments to the SYSOP. You also may suggest changes to bulletins by downloading, modifying them using any common word processing program (e.g., Word Perfect™, Word Star™, or Multimate™), and uploading them to the system as ASCII files (leave a message to the SYSOP indicating that you have done this). All changes will be reviewed by ICPIC staff. To download and upload material, see the sections on "Downloading Information from ICPIC" and "Uploading Information to ICPIC."

VII - ICPIC Data Bases

Description of the Data Bases

Each of the data bases may be updated by users through leaving changes on the message centre.

Data bases are searchable files of information that contain abstracts of technical case studies and publications, and expert contacts in the field.

Displaying the List of Data Bases

You may view the list of available data bases at the Main Menu by entering the following command:

Computer:	Main Board Command?
User Response:	OPEN <return>

Currently Active Data Bases

There are four primary data bases currently active on the system:

- International Cleaner Production Calendar of Events
- Cleaner Production Case Studies
- Cleaner Production Publications
- International Contact List of Experts

ICPIC welcomes your feedback on what additional information data bases would be appropriate to include in the system.

In addition to these primary databases, PIES and OzonAction have unique databases.

As an example of the primary data bases, the Calendar of Events data base is described below.

Calendar of Events

The Calendar of Events is a comprehensive list of upcoming international conferences, training seminars, and workshops, plus other events that may be of interest to the cleaner production network.

The Calendar provides:

- Event time and date
- Summary of topics covered
- Cost to attend
- Contact names and telephone numbers.

Accessing the Calendar of Events

The Calendar of Events is in data base number 1. To access it from the data base menu, select "1" from the list displayed.

Using the Calendar of Events

At the introductory screen, entering a <return> without specifying a year will select the calendar entry for the current year. Entering <return> again will list events occurring closest to the current date.

After you enter data base number 1, an introductory screen will ask you which year and month to list. If you selected "October 1991," you would see:

---------- October, 1991 ----------

No:	Date:	To:	Title
1	10/02/91	10/04/91	HazMat South '91 (Atlanta, Georgia)
2	10/21/91	10/25/91	10th Annual Recycling Congress (Milwaukee, Wisconsin)
3	10/21/91	10/23/91	International Conference of B.I.R. - The International Federation of The Reclamation and Recycling Industries (Vienna, Austria)
4	10/22/91	10/26/91	International Conference on Cleaner Production for the Steelmaking Industry
5	10/25/91	10/28/91	Wastestream: Focus on Recycling Technology & Solid Wastes Management & Trade Show (Vancouver, Canada)
6	10/28/91	10/30/91	2nd National Scientific and Technical Conference with Foreign Participation on "Problems of Energy-Conservation Technologies and Environment Protection" (Varna, Bulgaria)
7	10/28/91	11/02/91	Enviro Tech '91: 4th International Exhibition & Conference on Industrial Pollution Monitoring, Control and Safety (Bombay, India)

Enter the number that corresponds to the event you wish to view.

Computer:	ENTER to view NEXT MONTH, type in an EVENT NO. To see Event Description, P to return to Previous Menu, or Q to Quit. (ENTER, ##, P, or Q):
User Response:	4<return>

Note that this is a fictitious event used only as an example.

10/22/91 TO 10/26/91

TITLE: INTERNATIONAL CONFERENCE ON CLEANER PRODUCTION FOR THE STEELMAKING INDUSTRY

ORGANIZER: CHAMBRE DE COMMERCE ET D'INDUSTRIE DE TOULOUSE

LOCATION: TOULOUSE, FRANCE

TOPIC: THIS CONFERENCE FOCUSES ON CLEANER PRODUCTION ISSUES CONCERNING THE PRIMARY STEELMAKING INDUSTRY. CONFERENCE INCLUDES THE FOLLOWING TOPICAL SESSIONS:

- NEW CLEANER PRODUCTION TECHNOLOGIES
- TECHNOLOGY TRANSFER MECHANISMS
- CORPORATE CLEANER PRODUCTION PROGRAMS
- CLEANER PRODUCTION RESEARCH FOR STEELMAKING

CONFERENCE PARTICIPANTS INCLUDE CLEANER PRODUCTION EXPERTS, INDUSTRY REPRESENTATIVES, AND GOVERNMENT REPRESENTATIVES INVOLVED IN LOW WASTE TECHNOLOGY PROGRAMS

COST: F695

CONTACT: CHAMBRE DE COMMERCE ET D'INDUSTRIE DE TOULOUSE
B.P. 1704
2, RUE DE LOIRE
31402 TOULOUSE CEDEX
FRANCE

PHONE: (33) 25 25 33 65

FAX: (33) 25 25 42 60

U to view previous page or ENTER or P for Previous Menu. (U, Enter or P):

Cleaner Production Case Studies

Cleaner production case studies are options used by various facilities, which include technical and economic detail, accessed by a keyword search routine.

- Information within each case study includes, if possible:
  - Industry involved (including ISIC/SIC code when available)
  - Name and location of facility
  - Cleaner production category
  - Process and waste information
  - Scale of operation
  - Stage of development

- Level of commercialization
- Material/energy balances
- Investment costs
- Operational and maintenance costs
- Payback time
- Cleaner production benefits
- Obstacles, problems, and/or known constraints
- Contacts and citation
- Keywords
- Assumptions
- Peer review

The utility of this data base relies on users updating the case studies data base with short descriptions of new studies they are familiar with or have conducted. Similarly, user comments on the viability of cited examples under different circumstances will allow UNEP to enhance the information obtained from the summaries.

Keywords reference industry, SIC code and/or ISIC code, technology, and waste type. The keyword list may be found in the bulletin files or through the Help utility in this data base. (Type "H" at the prompt to access the list.) You may also download the key word list (filename: keyword.txt). For help with downloading, see "Downloading Information from ICPIC."

For persons interested in submitting case studies to ICPIC for possible inclusion in this data base, follow the guidelines for case study abstractors in Appendix F.

Accessing Cleaner Production Case Studies

You may access the keyword list by entering "H" at the data base menu or by viewing Main Menu bulletin number 11. (See "ICPIC Bulletins" for information on how to view a bulletin.)

The cleaner production case studies are in data base number 2. At the data base menu, select number "2" from the list displayed.

Two brief introductory screens will be displayed followed by the menu screen below:

```
Case Study Literature Search Menu
E ..... Enter keyword for search
Q ..... Quit (Return to Main Menu)
H ..... Help
G ..... Goodbye (Logoff)
```

A description of each of the available commands is presented in the case study command summary table at the end of this section.

Performing a Keyword Search

A full text search capability is currently being developed. This capability will allow you to select documents based on any word within the abstract rather than relying solely on keywords. Watch for availability announcement.

Performing a keyword search is a two-step process. First you must enter the keywords, then display the selected documents. The example below demonstrates searching the case studies for all studies involving electroplating:

Step 1: Select Your Keywords

Hit "E" to enter a keyword search.

Computer:	(34 min. left) (E), (X), (M), (O), (V), (Q), (G)?
User Response:	E <return>

The keyword search function is not sensitive to upper or lower case letters. Therefore, "electroplating," "Electroplating," and "ELECTROPLATING" will find the identical set of case studies.

Computer:	Enter your search string below. Press <Enter> when done. |---------- |
User Response:	ELECTROPLATING <return>

Computer:	I will be searching for the following: "ELECTROPLATING" Is this correct? (Y/N, <cr>=Y)?
User Response:	<return>

You may also string more than one keyword with special "and" and "or" characters. ELECTROPLATING+SOLVENTS- selects summaries with both electroplating and solvents. ELECTROPLATING|SOLVENTS- selects summaries with either electroplating or solvents.

The computer will search the data base for all summaries containing the keyword selected.

Step 2: Displaying Summaries

After searching the data base, the number of successful matches will be displayed. You will then see the following menu.

Case Study Literature Search Menu

E .....Enter keyword for search	S .....Scan abstract keywords
Q .....Quit (Return to Main Menu	# .....Select abstract to display
H .....Help	A .....Display all abstracts
G .....Goodbye (Logoff)	<Enter> ....Display next abstract

The "S" (for "Scan item headers") allows you to scan all the keywords listed for each document in your search. Thus, you can refine your search by selecting documents listed with other keywords in which you are interested.

Entering "S" to view the keywords will produce the following screen:

1: Electroplating, SIC=3911, metals, wasterwater, rinse procedures, material substitution, Solvent
2: Electroplating, SIC=3911, Solvent, Material substitution
3: Electroplating, SIC=3911, Electrolytic recovery, Ion exchange
4: Electroplating, Dead Rinse, Drag-out, Rinse Procedures, Recycle
5: SIC=3520, SIC=3530, Metal Treating, Waste Oil, Sludge, Paint, Electroplating
6: SIC=7399, Silver Recovery, Film Processing, Electroplating, Chemical Treatment, Metal, Sludge
7: SIC=3471, Electroplating, Plating, Polishing, Anodizing, Coloring...

You may select any summary using the numbers shown on the left side of the keywords in the above screen, or enter <return> to view the summaries starting at number one.

Computer: (30 min. left) (S), (#), (A), (E), (H), (X), (M), (O), (V), (Q), (G) (Enter = Next Item)?

User Response: 4 <return>

1.0 Headline: Disposal of Spent Electroplating Baths and F006 Waste is Eliminated by Regeneration of Baths Using Activated Carbon

2.0 SIC Code: 3471, Electroplating, Plating, Polishing, Anodizing, and Coloring

3.0 Clean Technology Category

3.1 Technology Principle: The principle of this technology is to regenerate electroplating baths using activated carbon to remove organic contaminants. Copper and solder electroplating baths are treated with activated carbon once every 3 months and every month, respectively. 50% hydrogen peroxide is added to oxidize volatile organic contaminants. Activated carbon absorbs products from the breakdown of organic brighteners, polymeric photoresist additives, and inorganic impurities that dissolve in the plating bath and reduce plating quality. These electroplating baths never have to be dumped with the activated carbon regeneration system. Spent activated carbon is disposed in a hazardous landfill.

3.2 Cross-Industry Application: Regeneration of electroplating baths.

4.0 Name & Location of Company: Referred to as Facility E in this report. Location is not provided.

5.0 Case Study Summary

5.1 Incentives: Regulatory incentives include eliminating the generation and subsequent disposal of large quantities of metals containing sludge (RCRA Waste Code F006). Annual savings of $57,267 are from reduced disposal costs and raw material purchasing needs.

5.2 Original Manufacturing Process and Previous Waste/Emission Management Methods: Printed circuit boards are plated with four acid copper and one aqueous tin/lead plating baths in a 48-tank plating line. The line begins with a nitric acid NHO_3 rack strip tank. After the racks are stripped, boards are loaded and then undergo rinsing, cleaning with phosphate solutions (H_3PO_4), and more rinsing before being plated...

5.3 Scale of Operation: Annual production volume is 600,000 ft^2 of finished boards. The plant employs 600 people.

5.4 State of Development: The clean technology is fully implemented.

5.5 Level of Commercialization: The clean technology is fully commercialized.

5.6 Results of Application: New materials include 50% hydrogen peroxide, and activated carbons. Spent activated carbon is a new waste.

5.7 Effects on Products: Clean technology does not affect product quality.

6.0 Economics (October 1986)

6.1 Investment Costs: Capital costs for a Baker Brothers Model 3020 Y activated carbon filtration unit with slurry tank is $8,356. Nominal capacity is 3,700 gpm; at open pumping capacity, throughput is increased to 4,800 gpm. The stainless steel unit consists of 22 filter pads with a total available filtration area of 40.5 ft^2.

6.2 Operational and Maintenance Costs: Operating and maintenance costs are $7,373/year based on 8 hours per treatment, 28 treatments per year. This includes four activated carbon filtrations per year on each of the four, 2,400 gallon acid copper baths, and 12 filtrations on the 1,200 gallon 60/40 tin/lead plating bath....

This is a partial case study included for illustrative purposes. To see a complete list of the data fields in a case study, refer to Appendix B.

12.0 Contacts and Citation

12.1 Type of Source Material: EPA Final Report...

12.4 Citation: Case Studies of Existing Treatment Applied to Hazardous Waste Banned from Landfill Phase II, Summary of Waste Minimization Case Study Results, Final Report, Prepared by Alliance Technologies Corporation (formerly GCA Technology Division, Inc.), EPA Contract No. 68-03-3242, October 1986.

Authors: Nunno, Thomas; Palmer, Stephen; Arienti, Mark; Breton, Marc; Alliance Technologies Corp. (formerly GCA Technology Division), prepared under EPA Contract No. 68-03-3242 for Hazardous Waste Engineering Research Laboratory.

13.0 Keywords: Electroplating bath, activated carbon, carbon absorption, regeneration, reclamation, SIC = 3471

To print out a hard copy of a case study summary, use the screen capture feature of your communication software (this command is explained in "Downloading Information from ICPIC.")

After you have finished scrolling through one or more summaries, you may enter "E" to perform a different search, or enter "Q" to return to the conference main menu.

A brief review of all case study commands available is presented in the command summary table below:

CASE STUDY COMMAND SUMMARY

Command	Description
E	**E**nter keyword for search - allows you to enter a single keyword or string of keywords using (+) and (|) for "and" and "or," respectively.
H	**H**elp - provides a description of each of the commands. Also provides a list of keywords currently used by the system.
Q	**Q**uit - returns to the Data Base Menu.
G	**G**oodbye - terminates current user session and hangs up.

The following additional commands are available only after a successful keyword search has been performed:

Command	Description
S	**S**can all item headers - displays all keywords associated with selected summaries.
1-?	Selects item number for display - displays a summary on the screen. The number corresponds to the order in which the summary was found in the system.
A	Display **A**ll items - displays all summaries to the screen that were found in a given search.
<Enter>	Display next item - displays the next summary available from the list selected.

This command is useful when using the screen capture method of data retrieval. See "Downloading Information from ICPIC."

Cleaner Production Publications

Cleaner Production Publications Data Base

- Over 1151 abstracts of international documents frequently referenced and/or distributed to persons interested in cleaner production.
- Includes programmatic, introductory, guidance, legislative, technical, and definitional documents.
- Allows you to select and view brief document summaries using a keyword search routine.
- Includes information within each abstract:

  - Title of the publication
  - Author
  - Reference citation
  - Contact or publication source
  - Abstract of the article
  - Document order information.

After entering "OPEN 1" at the Main Menu prompt, select number 3 to enter the data base.

Performing a Keyword Search

Commands for this data base are identical to those used for the Case Studies data base. Refer to the case study command summary for a list of available commands.

Cleaner Production Contacts

This data base will be described in the next version of this guide.

VIII - Other Information Systems

In the future, in addition to PIES and OAIC that are available at entry to ICPIC, other systems will be associated with ICPIC. When this occurs, this section will contain details on these and other information systems and how ICPIC users may take advantage of them.

IE/PAC is always looking for other sources of cleaner production information. If you have or know of a system that has cleaner production information please let IE/PAC know.

IX - Downloading Information from ICPIC

Methods of Downloading Information

Because most users wish to permanently capture information from the system, two methods exist for capturing data that is contained in ICPIC:

- Capturing the information that scrolls across the screen to the user's disk drive (a method known as screen capture, capturing data to disk, or file capture)
- Requesting that ICPIC transmit a specific file to the user's PC (direct file transfer).

Each of these retrieval methods is described below.

Screen Capture

Use: Capturing any text information that appears on your screen when using ICPIC.

Advantages: All text is captured. In addition to capturing text such as bulletins and data base information, a user can also save the menu and help screens for future reference. This method is the only way to save information from the Case Studies and Publications data bases. In comparison with the direct file transfer option, this retrieval method requires fewer commands to execute.

The following steps describe how a user can capture information to a file on her PC. Crosstalk™ is used as an example (most communication software follows a similar sequence of commands).

Step 1: Identify the Information You Wish to Capture

Access ICPIC and decide which information you wish to capture. For example, if you are in the Case Studies data base you might wish to conduct a search on cleaner production techniques for the leather tanning industry.

Case Study Literature Search Menu

E .... Enter keyword for search
Q .... Quit (Return to main menu)
H .... Help
G .... Goodbye (Logoff)

ICPIC Computer:	(59 min. left) (E), (H), (X), (M), (O), (V), (Q), (G)?
User Response:	E <enter>

ICPIC Computer:	Enter your search string below. Press <Enter> when done.
User Response:	LEATHER+TANNING <enter>

ICPIC Computer:	I will be searching for the following: "leather+tanning" Is this correct? (Y/N, <cr>=Y)?

Step 2: Instruct Your Communication Software to Begin Screen Capture

Before you enter the next ICPIC command required to view that information (in this case, after you verify the "leather+tanning" keywords), you must exit to your communication software and instruct it to begin capturing the data.

The Crosstalk™ command line will appear on the bottom of your screen as soon as you hit the escape key.

The "CA" command instructs Crosstalk™ to capture data to a file on your PC that you specify. In this case, the user has chosen to capture the search to a file named "LEATHER" on her d hard drive. If you do not specify a drive and path, then by default the file will be created in your Crosstalk™ directory.

User Response:	<Esc key>
User's Communication Software:	Command?
User Response:	CA D:\LEATHER
User's Communication Software:	Capture to D:LEATHER

Step 3: Instruct ICPIC to Display the Information

After issuing the capture commands you are automatically returned to ICPIC from your communication software. You must now instruct ICPIC to begin displaying the information you wish to see.

ICPIC Computer:	I will be searching for the following: "leather+tanning" Is this correct? (Y/N, <cr>=Y)?
User Response:	<enter>

Displaying item number 1

****

DOCNO: 400-054-A-241 *****

INDUSTRY/SIC CODE:

Manufacture of Leather / 3231

NAME/CONTACT:

Institute for Leather and Shoe Research/TNO;
Ministry of Public Health and Environmental Protection of the Netherlands

TECHNOLOGY DESCRIPTION:

The company removes trivalent chromium from the effluent and re-uses it in the tanning process. The mean concentration of chromium (III) in the effluent is 5 kg/m3. This effluent is treated with MgO, producing a fast-settling and compact precipitate, Cr(OH)3. The chromium (III) concentration in the effluent is thus reduced to 2 g/m3 (a reduction of more than 99 percent). The Cr (OH) 3 is then dissolved in sulfuric acid ...

Step 4: View the Information on Your Screen

ICPIC will display the information, and everything that you view on the screen (including any commands or menus) will be saved to the file that you specified in Step 2.

If the information you are viewing contains more than one screen, ICPIC will prompt you with "More: (Y)es, (N)o, (NS) NonStop, (S)kip curr. item?" Select the nonstop option if you wish the system to display the information continuously, as opposed to one screen at a time.

Step 5: Instruct Your Communication Software to Stop Screen Capture

After you have viewed all of the information that you wish to capture, exit back to your communication software and instruct it to stop capturing the data. When you issue the proper command to stop capturing to disk, your software will issue a message indicating that the capture was successful.

User Response:	<Esc key>
User's Communication Software:	Command?
User Response:	CA OFF
User's Communication Software:	Capture file successfully written

The "CA OFF" command instructs Crosstalk™ to stop capturing data and to close the file on your PC.

You are automatically returned to ICPIC from your communication software. At this point, you are free to continue searching through ICPIC for additional information.

Case Study Literature Search Menu

E .... Enter keyword for search
Q .... Quit (Return to main menu)
H .... Help
G .... Goodbye (Logoff)

Direct File Transfer

Use: Electronically retrieving a specific ICPIC data file.

Advantages: Requires much less time to receive information, in comparison with the disk capture method. Also, does not capture any extraneous screen information (e.g., command prompts or menus) that can be saved using the disk capture method. Some ICPIC information is only available using the direct file transfer method (e.g., files containing full text documents).

The following steps describe how a user can use direct file transfer to download ICPIC data files to her PC. Crosstalk™ is used as an example.

Step 1: Identify Which File You Want to Download

A portion of the information contained in ICPIC is available for file downloading: most data found in ICPIC data bases are only retrievable using the screen capture method described above. The following types of information, however, are available as downloadable files:

- Bulletins
- Full text documents
- Files that have been uploaded by other ICPIC users.

To access a list of these files, type "F" at the Main Menu.

The filenames used for downloading are in the file directory, with the filename listed in the left column and the file description in the right column (as follows):

Filename	Description
blt1.	Cleaner Production News Bulletin #1

```
INTERNATIONAL CLEANER PRODUCTION INFORMATION
CLEARINGHOUSE (ICPIC)
Files Available for Downloading

1 --> ICPIC Bulletin Files

2 --> Other files available for download

Enter 1 or 2 to view ICPIC file names available for downloading.
```

Computer:	(H=help, (1-2), File List Command?	
User Options:	H <return>	- for help with file transfer commands
	1-2 <return>	- to view a listing of directories
	<return>	- to return to conference main menu

If you select 1, for example, you will see a screen similar to the following displaying the list of files within the ICPIC bulletins directory. (This list corresponds to the list of bulletins.)

```
                    Files Available for Downloading

File
Name                          Contents/Description

blt1.   Cleaner Production News`
blt2.   New Cleaner Production Publications
blt3.   ICPIC User Statistics
        Updated daily
blt4.   Cleaner Products
blt5.   UNEP IE/PAC Cleaner Production Programme
blt6.   UNEP IE/PAC's Cleaner Production Initiatives
blt7.   Previous Bulletins
blt8.   OzonAction Information Clearinghouse

END OF BULLETIN LIST
```

Bulletins can be downloaded directly to your PC using the download format listed.

Step 2: Request the File for Downloading

From the ICPIC Main Menu, select the "(D)ownload a File" option.

ICPIC Computer:	(48 min. left) Main Board Command?
User Response:	D<enter>
ICPIC Computer:	Filename to Download (Enter)=none?

You must now specify which file you wish ICPIC to send you. The system will then check to ensure that the file you request exists in its file directory. Make sure the spelling of the filename and extension (if any) are correct.

User Response:	BLT 1
ICPIC Computer:	Checking file transfer request. Please wait...

If you specified a file transfer protocol when you first registered with ICPIC, you will not have to complete this step. If you wish to change your protocol at any time before or after a download operation, type "T" at the Main Menu to access the hidden "(T)ransfer Protocol" command.

Step 3: Select a File Transfer Protocol

If the file exists, then ICPIC will ask you which file transfer protocol it should use when transmitting the file to your PC. File transfer protocols are standardized methods for electronically exchanging data between two remote computers. When two PCs are exchanging files (downloading **or** uploading), they must communicate in the same language (i.e., they must both use the same file transfer protocol). Consult your communication software documentation to determine which protocols your software supports. (Xmodem is a popular file transfer protocol.)

ICPIC Computer:

```
   (A) Ascii (Non-Binary)
   (X) Xmodem (Checksum)
   (C) Xmodem-CRC (CRC)
   (O) 1K-Xmodem (PCBoard Ymodem)
   (Y) Ymodem
   (Z) Zmodem (DSZ)
=> (N) None

Protocol Type for Transfer, (Enter) or (N)=abort?
```

User Response:	X <enter>

ICPIC will then inform you how long it will take to transmit the file using the file transfer protocol you selected.

Remeber, you can abort your download at anytime by typing <Ctrl-X>.

ICPIC Computer:

```
Download Time:  0.8 minutes (approximate)
Download Size:  8527 bytes (67 blocks)
Total Will Be:  8527 bytes
Protocol Type:  Xmodem (Checksum)
File Selected:  BLT1
(Ctrl-X) Aborts Transfer
```

Step 4: Instruct Your Communication Software to Receive a File

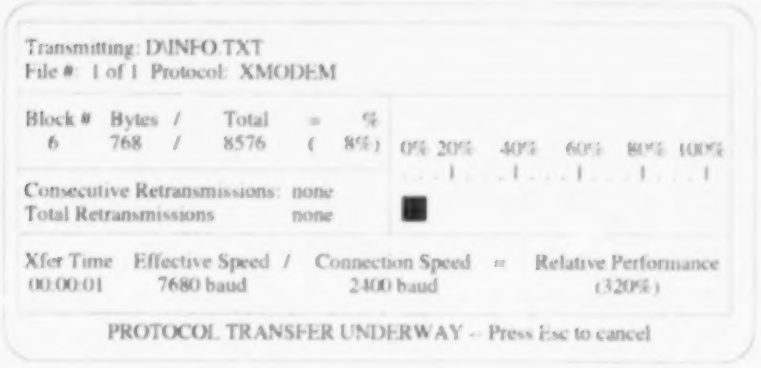
The "RX" command instructs Crosstalk™ to receive a file using the Xmodem protocol and write it a new file on your PC. In this case, the user has chosen to capture the data to a new file named "INFO.TXT" on her d hard drive. The new file does not have to be named after the ICPIC file name: it can be named anything you choose.

At this point, ICPIC is ready to transmit the file, but your communication software has not been instructed to receive it. You must exit to your communication software and issue the proper command.

User Response:	<Esc key>
User's Communication Software:	Command?
User Response:	RX D:\INFO.TXT <enter>

Step 5: Receive the File from ICPIC

You will be automatically returned to ICPIC, and the system will begin transmitting the file to your PC. A transfer status screen similar to the one below will appear to indicate the transmission's progress.


Transmitting: D:\INFO.TXT
File #: 1 of 1 Protocol: XMODEM
Block # Bytes / Total = %
6 768 / 8576 (8%)
0% 20% 40% 60% 80% 100%
Consecutive Retransmissions: none
Total Retransmissions none
Xfer Time Effective Speed / Connection Speed = Relative Performance
00:00:01 7680 baud 2400 baud (320%)
PROTOCOL TRANSFER UNDERWAY -- Press Esc to cancel

When the transfer is completed, ICPIC will return you back to the Main Menu. You are now free to resume searching ICPIC for additional information.

Printing Document Files

You may print any documents that you have downloaded, or text that you have captured to disk, once you have ended your session with the system and returned to DOS from your communication software. The following example demonstrates how to exit from ICPIC, leave Crosstalk™, and print a document.

Leaving ICPIC

First you must log off ICPIC. You must exit from both ICPIC and your communication software in order to print a downloaded file. Enter "G" for "Goodbye" to exit from ICPIC.

Computer:	(47 min. left) Main Board Command?
User Response:	G <return>

You will be automatically returned to your communication software.

Exiting from Crosstalk™

Computer:	Thank you for Calling ...
User Response:	<Esc Key>

Computer:	Command?
User Response:	QUIT <return>

Printing a Document

You are returned to the DOS prompt of your PC. The information that you retrieved using screen capture or direct file transfer is in ASCII format. There are several methods for printing ASCII data:

- *Word processor.* Some word processing software (e.g., WordPerfect™) can read ASCII files automatically. If your word processor has this capability, simply access the file as you would any other text document and it will be automatically converted from ASCII. Other word processing software may require conversion before an ASCII file is readable. Consult your word processor's documentation for details on converting ASCII files.

- *Text editor.* Most text editor software packages allow you to read and print ASCII files. Examples of such software include Edlin™, Brief™, and QEdit ™. Consult your text editor's documentation for more details.

- *DOS COPY command.* This DOS command allows you to print ASCII files to a device that you specify. Instructions on how to use this command follow.

Printing Using the DOS COPY Command

To print a document using this command, enter the command from your PC's prompt using this format:

COPY [drive]\[path] [filename].[extension] [device for printing]

For example:

User's PC:	D:\
User Response:	COPY D:\INFO.TXT LPT1

To print a document, you must be in the same directory that contains the files. To change directories, enter the CD command at the DOS prompt (e.g., CD\XTALK).

X - Uploading Information to ICPIC

The Importance of Sharing Information

One of ICPIC's largest resources is its diverse group of members, who comprise the largest source of cleaner production knowledge in the world. To succeed as a tool for interactive technology transfer, ICPIC depends on your input and welcomes any new information and encourages all users to update the system. By sharing cleaner production information with each other on ICPIC, all users can benefit and avoid duplicative efforts. IE/PAC encourages users to submit information on:

- Upcoming events or activities involving cleaner production
- Programme information, such as new audit programmes, research and development activities, grants, or initiatives
- Case studies of cleaner production successfully implemented in industry
- New publications or newsletters
- Expert contacts.
- Other sources of cleaner production information

How To Update ICPIC

You may convey information to ICPIC using any of the following methods:

- Uploading a File – You may enter information by uploading a file to the system (see following discussion).
- Message Centers – You may send your comments, suggestions, and updates through any of the system's message centers.

- Mail – You may send information to the contacts listed in "ICPIC User Support."
- Telephone –You may call the the ICPIC Technical Support Line at 33-1-44-37-14-50 (outside of France).
- Facsimile – You may fax your updates to ICPIC at 33-1-44-37-14-74.
- Telex – You may telex ICPIC at 209 997 F.
- Cable – You may cable ICPIC at UNITERRA PARIS

Using the Message Centers to Update ICPIC

You may enter your comments, suggestions, and updates via the message centers by sending messages to the SYSOP using the "(C)omment to UNEP-IE/PAC" command.

For information on how to enter a message in the message centers, see the "ICPIC Message Centre" section in this guide.

The main message centre is monitored daily. All messages addressed to the SYSOP are reviewed by ICPIC staff the next business day.

Uploading Files to ICPIC

To add new information to the system, a user may upload a file from his PC to ICPIC using the direct file transfer method. Additionally, if a user wishes to update information in bulletins and data bases that currently exist on ICPIC, a user may download those files, modify them, and then upload them back to the system (file downloading is described in the previous section of this guide).

Instructions on how to upload a file containing new information or a modified ICPIC file follow. Crosstalk™ communication software is used as an example.

Step 1: Notify ICPIC That a File Is Being Uploaded

From the ICPIC Main Menu, select the "(U)pload a File" option.

ICPIC Computer:	(48 min. left) Main Board Command?

User Response:	U<enter>
ICPIC Computer:	Filename to Upload (Enter)=none?

Whatever file name you choose, it must be in the following format: FILENAME.EXT (the file name cannot exceed eight characters, and the extension cannot exceed three characters).

At this point, the system is requesting that you submit a name for your file. ICPIC assigns this name to the uploaded file when it is stored in the system. The name can be anything that you choose: it is not required to have the same name as the file on your PC.

User Response:	SOLVENTS.TXT
ICPIC Computer:	Checking file transfer request. Please wait... Before beginning, enter a description of (SOLVENTS.TXT) Enter description - All files are reviewed by EPA before being made available Enter your text. (Enter) alone to end. (45 chars/line, 5 lines maximum) ? ( )

ICPIC is now asking for a short description of the contents of the file which you are uploading. This message is stored on the system with your uploaded file and tells the SYSOP what type of information your file contains.

User Response:	SOLVENT SUBSTITUTION CASE STUDIES <enter>
ICPIC Computer:	? ( )
User Response:	<enter>

Step 2: Select a File Transfer Protocol

Next, ICPIC will ask you which file transfer protocol you would like it to use when receiving the file uploaded from your PC. File transfer protocols are standardized methods for electronically exchanging data between two remote computers. When two PCs are exchanging files (uploading or downloading), they must communicate in the same language (i.e., they must both use the same file transfer protocol). Consult your communication software documentation to determine which protocols your software supports. (Xmodem is a popular file transfer protocol.)

If you specified a file transfer protocol when you first registered with ICPIC, you will not have to complete this step. If at any time you wish to change your protocol, type "T" at the Main Menu to access the hidden "(T)ransfer Protocol" command.

ICPIC Computer:	(A) Ascii (Non-Binary) (X) Xmodem (Checksum) (C) Xmodem-CRC (CRC) (O) 1K-Xmodem (PCBoard Ymodem) (Y) Ymodem (Z) Zmodem (DSZ) => (N) None Protocol Type for Transfer, (Enter) or (N)=abort?
User Response:	X <enter>

ICPIC will display a status screen confirming your file transfer protocol and indicating that there is available disk space on ICPIC to store your uploaded file. The system also informs you that the file transfer can be aborted by entering <Ctrl X> at any time during the upload.

```
ICPIC Computer:

Upload Drive : 91,938,816 Bytes Free Disk Space
Upload Status: Screened Before Posting
Protocol Type: Xmodem (Checksum)
(Ctrl-X) Aborts Transfer
```

Step 3: Instruct Your Communication Software to Transmit File

At this point, ICPIC is ready to receive the file, but your communication software has not been instructed to transmit it. You must exit to your communication software and issue the proper command.

User Response:	<Esc key>
User's Communication Software:	Command?
User Response:	XX D:\SOLVENTS.TXT <enter>

The "XX" command instructs Crosstalk™ to transmit a file using the Xmodem protocol. Note that in this example, the user is transmitting a file that resides in his d drive under the name "SOLVENTS.TXT".

Step 4: Transmit the File to ICPIC

You will be automatically returned to ICPIC, and your PC will begin transmitting the file to ICPIC. Your communication software will display a transfer status screen similiar to the following example to indicate the transmission's progress.

```
Transmitting: D\SOLVENTS.TXT
File #:  1 of 1  Protocol:  XMODEM

Block #   Bytes  /   Total   =   %          0%  20%   40%   60%   80%  100%
   6        768  /    8576   (   8%)       . . . I . . . I . . . I . . . I . . . I
                                            ■
Consecutive Retransmissions:  none
Total Retransmissions         none

Xfer Time   Effective Speed  /  Connection Speed  =  Relative Performance
00:00:01       7680 baud          2400 baud              (320%)

PROTOCOL TRANSFER UNDERWAY -- Press Esc to cancel
```

When the file upload is completed, your communication software will inform you that the transfer was a success, and ICPIC will respond with a notification that it received the file.

User's Communication Software:	Transfer Successfully Completed. (Avg. cps: 199)
ICPIC Computer:	Thanks for the file(s)! (41 min. left) Main Board Command?

You are now free to upload another file or resume using ICPIC.

XI - Trouble-Shooting Tips

Know How to Use Your Own Hardware/ Software

It is essential that you learn how to properly configure and operate your own PC, modem, and communications software *before* connecting with ICPIC. If you encounter any difficulties, please consult the documentation that accompanied your hardware and software first before contacting UNEP IE/PAC. If your office has a computer support staff, please seek their advice as well.

Primary Data Bases

You can exit from all of the data bases by typing "Q" at their menus.

Trouble Connecting to ICPIC

If you experience difficulties in connecting with ICPIC, the trouble may be caused by one of several common errors. First, check to be sure that your telephone line is connected properly to your modem and, if you have an external modem, that the modem is connected properly to your PC. Then, make sure you are dialing the correct telephone number. If you are in an office building, you may need to dial "0" to reach an outside line.

Also, make sure that your communications software is set to a speed of 1200, 2400, or 9600 baud, the data bits parameter is set to 8, parity is set to none, and stop bits is set to 1.

If you connect to ICPIC but see garbled language on the screen, exit, hang up, and try again (you may have encountered line noise on your telephone connection). If you reach a busy signal, indicating that all 11 lines to ICPIC are in use, hang up and try to access ICPIC a few minutes later.

Menu Screens Don't Appear

If menu screens are not appearing, you may have inadvertently typed the "X" command, which put you into "Expert" mode. To view menus once again, type "X" at the Main Menu command prompt.

Sending/Receiving Messages

If you are having trouble sending or receiving messages, make sure that you and the sender/receiver are using the same message centre. Messages sent through the ICPIC main message centre *must* be accessed through the ICPIC Main Menu. Messages sent through an industrial use sector *must* be accessed through that industrial use sector's message centre.

Freezing of Screen

Infrequently, you may find that the system binds or stops for no reason. This can be caused by electronic surges, electrical storms, and bad telephone lines. No commands can unlock a frozen screen. The best response is to disconnect by rebooting your computer (i.e., turning your PC off and then on again) and reconnecting to ICPIC.

Accidental Disconnection from ICPIC

Infrequently, you will see an indication on the screen that the carrier signal has been lost. This could be caused by quirks in the telephone lines, or the fact that you have either exceeded your time allotment on ICPIC, or neglected to enter a command within 3 minutes of your last command. To prevent telephone lines from being tied up, ICPIC automatically logs off users who have forgotten to enter a command. To reconnect, call ICPIC back.

Exit Summary

This list describes commands required to exit various features of the ICPIC system.

Message Centre

"N" at "(H)elp, (E)nter=Continue, (RE)=Reply, (T)=View Replies?" prompt

<return> at "Message Command?" prompt

Bulletins

"N" at "More?" prompt

<return> at "Bulletin List Command?" prompt

Data Bases
From the Data Bases Menu, "0" returns the user to the ICPIC Main Menu.

From each of the following data bases, "Q" will return the user to the Data Bases Menu:

International Calendar of Events
Case Study Abstracts
General Publication Abstracts
International Cleaner Production Contact List

XII - ICPIC User Support

ICPIC user support is available both on- and off-line.

On-Line Help

- For command-specific: "H" at the conference menu prompt followed by the command you need assistance with. Example: To receive help with using the message centre, type "H E" at the Main Menu prompt.

- For technical or system questions, use the ICPIC main message centre to leave a "(C)omment to UNEP IE/PAC." All comments/questions will be reviewed by the SYSOP the following morning. Responses or an indication that information is being collected to address a particular question will be posted the next business day.

Off-Line Help

Questions concerning system operations or the technical information contained in ICPIC should be directed to:

Mr. Anh Tuan Vu
UNEP
Industry and Environment Programme Activity Centre
Tour Mirabeau
39-43 Quai Andre Citroën
75739 Paris CEDEX 15
France

Telephone:	33 (1) 44 37 14 50
Facsimilie:	33 (1) 44 37 14 74
Telex:	204 997 F
Cable:	UNITERRA PARIS

ICPIC welcomes any comments about this user guide, especially with regard to content, style, and ease of use.

Appendix A: UNEP's Industry and Environment Programme Activity Centre

The Industry and Environment Programme Activity Centre (IE/PAC) was established by UNEP in 1975 to bring industry and government together for environmentally sound industrial development. The IE/PAC is located in Paris. Its goals are:

- to encourage the incorporation of environmental criteria in industrial development plans;
- to facilitate the implementation of procedures and principles for the protection of the environment;
- to promote the use of safe and "clean" technologies;
- to stimulate the exchange of information and experience throughout the world.

To achieve these goals, the IE/PAC provides access to practical information and develops co-operative on-site action and exchange backed by regular follow-up and assessment. To promote the transfer of information and sharing of knowledge and experiences, IE/PAC has developed three complementary tools:

Technical Reviews and Guidelines. These publications describe technologies in use in various industrial sectors, their environmental impact, appropriate technologies for the prevention and treatment of pollution ("clean" technologies), and discharge standards and regulations in force in various countries. The guidelines are addressed to government officials, industry managers and members of environmental protection associations.

"Industry and Environment" Review. Each issue of this quarterly review focuses on a main theme. Articles by government officials, industry managers, scientists and representatives of non-governmental organizations share the results of research and experience, and present emerging technologies and future perspectives. Important events around the world in the field of the industrial environment are featured. A forum for the exchange of ideas, the review reaches over 8000 readers in 160 countries.

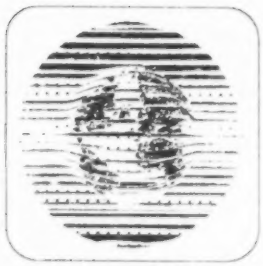
Query-Response Service. With the support of its data base, library and network of academic, industrial and government contacts, the IE/PAC responds to specific requests for technical information on the industrial environment. In keeping with its policy of technical co-operation, the IE/PAC facilitates technology transfer and the implementation of practices to safeguard the environment.

Promotion of Awareness and Interaction. By organizing conferences, symposia and meetings of experts, the IE/PAC stimulates dialogue between world-wide representatives of industry, government, universities and environmental organizations enabling them to work together towards environmentally sound industrial management.

Training Activities. Workshops and seminars for industry managers and government officials are organized to enhance knowledge of the principles and procedures for effective management of the industrial environment. These activities are designed to assure the follow-up and on-site implementation of agreed recommendations and guidelines.

Diagnostic Studies. At government request, the environmental diagnosis of a problem in a factory, or of a particular subject, is carried out by industry or government experts. In collaboration with local specialists, practical solutions are then assessed. These activities are undertaken with the technical and financial support of industry and government.

Appendix B: UNEP IE/PAC's OzonAction Programme



Background: The Montreal Protocol and the IMOF

In 1974, Sherwood Rowland and Mario Molina of the University of California claimed that the man-made chemicals known as chlorofluorocarbons (CFCs) were damaging the stratospheric ozone layer. Subsequent research supported the theory, and it is now established that the stratospheric ozone layer — which protects the earth from dangerously high levels of ultraviolet radiation from the sun — is being destroyed by human activity. Ozone depleting substances (ODSs) are used in the manufacture of thousands of products.

The Montreal Protocol on Substances that Deplete the Ozone Layer was drawn up under the guidance of the United Nations Environment Programme (UNEP) in September 1987. The Protocol identified the main ODSs, and set specific limits on their production levels in the future. By July 1992, 83 countries had ratified the agreement.

It is intended that the Protocol be continually updated, as necessary. In June 1990, the Parties to the Protocol met in London to consider the implications of new scientific evidence that showed that the ozone layer was being depleted even faster than originally thought. The London meeting agreed to phase out the consumption and production of CFCs and halons by the year 2000, and to control other chemicals, namely carbon tetrachloride and methyl chloroform.

The London Amendments to the Protocol acknowledged the financial and technical assistance that developing countries would need, and to meet this need it established the Interim Multilateral Ozone Fund (IMOF). The IMOF serves all countries that operate under paragraph 1 of Article 5 of the Protocol (known as "Article 5 countries"). UNEP, the United Nations Development Programme (UNDP), and the World Bank were chosen to be the Fund's implementing agencies, with UNEP being assigned the responsibility of conducting research, gathering data, and providing a clearinghouse function.

Signatories to the Montreal Protocol agreed to reduce and eliminate use of the controlled ODSs even though substitutes and alternative technologies were not yet fully developed. Industries and manufacturers are starting to replace the controlled ODSs with less damaging substances, but a major obstacle in the conversion process is a lack of up-to-date, accurate information on issues relating to ODS substitutes and ODS-free technologies. UNEP is meeting this challenge through its OzonAction programme.

UNEP IE/PAC's OzonAction Programme

Established in 1991, UNEP IE/PAC's OzonAction Programme consists of three major elements: information exchange, training/networking, and country programmes.

Information Exchange

The information exchange element of the OzonAction Programme aims to transfer information concerning policy and technical options for the phase-out of the controlled ODSs to developing countries.

OzonAction Information Clearinghouse (OAIC). An on-line computerized information exchange system designed to serve the needs of Article 5 countries. Based in Paris, France, the OAIC contains data on the industrial use sectors faced with phasing out the controlled ODSs:

- aerosols, sterilants, miscellaneous uses, and carbon tetrachloride;
- foams;
- halons;
- methyl bromide;
- refrigeration, air conditioning, and heat pumps; and
- solvents, coatings, and adhesives.

Although methyl bromide is not currently controlled under the Montreal Protocol, information on this chemical is being collected by the OAIC because of the Parties' increased interest in this substance.

For each of these areas, OzonAction is collecting data from public and private-sector sources around the world. Additionally, UNEP's Technical Options Committees combine the talent of internationally-recognized experts to develop state-of-the-art technical guidance for each industrial use sector.

The OAIC contains the following features:

- descriptions of alternative technologies;
- a data base of ODS-reduction products and services;
- summaries of national, corporate, and international organization phase-out activities;
- a calendar of conferences, events and workshops;
- an international directory of contacts;
- abstracts of technical, scientific, and programmatic documents;
- news bulletins; and
- a message center.

The OAIC provides a global communication mechanism for people and organizations interested in exchanging information on ODS phase-out. The OAIC is designed to be a "pointer" system that provides users with assistance on where to go with more specific information requests. The targeted users of the system include members of industry (ODS chemical manufacturers, suppliers, equipment manufacturers, end-product manufacturers), public sector policymakers, research institutions, and other organizations involved in ozone layer protection. While the system is specifically targeted at Article 5 country users, others in the developed and developing world are encouraged to use the OAIC to exchange information with their peers.

The OAIC is accessible by anyone with a personal computer, a modem, communication software and access to a telephone line. There is no direct cost to use the system, such as user fees or line charges. The system is accessible via regular telephone line, the SprintNet[SM] data service, and numerous national packet switching networks.

OzonAction Newsletter. This quarterly newsletter reports on the initiatives undertaken by countries and organizations that are implementing the Montreal Protocol. The OzonAction newsletter contains the latest news from governments and industry regarding the phase-out of the controlled ODSs, as well as technology updates. The newsletter is available in Arabic, Chinese, English, French, and Spanish.

Other ODS-Reduction Documents. OzonAction will publish specific technical and policy documents and brochures in response to specific information needs within industry and government.

Training/Networking

Regional Workshops. A series of regional workshops is designed to provide government and industry decision-makers with basic information on ODS control policies and strategies. Additionally, these workshops provide participants with the latest information about replacement technologies and products relating to the controlled substances.

National Activities. The OzonAction Programme will sponsor information campaigns at the national level to help raise the consciousness of the general public about the threat posed by the controlled ODSs. OzonAction will also be cooperating with UNDP to address specific technological issues within specific countries.

Documentation/Training Manuals. The OzonAction Programme will additionally publish technical papers, workshop proceedings, and training manuals.

Country Programmes

The OzonAction Programme is conducting a series of country programmes for developing nations that have low rates of consumption for the controlled substances. The purpose of these programmes is to establish a baseline survey on the use of the controlled substances in these countries and to draw up policy strategies for their replacement and control. The data developed under this effort will establish a basis for other phase-out projects.

Appendix C:
Glossary of Computer Terms

This glossary is included for those persons who are unfamiliar with the computer terminology used in this guide. It is not intended to be an exhaustive list of all such terms.

Many of these terms are related to one another, therefore words in italics refer to terms defined elsewhere in the glossary.

ASCII — ASCII refers to American Standard Code for Information Interchange. It is a widely-accepted international standard format for representing characters electronically. Many text *files* are formatted in ASCII.

Baud — A rate of speed for data transmission, roughly equivalent to the number of *bits* transmitted per second. Common baud rates are 1200, 2400, and 9600. 2400 baud is approximately equal to 240 characters transmitted in one second.

Bit — Bit refers to "Binary Digit." A bit is the smallest data unit understandable by a computer, and can have a value of either "on" or "off."

Bulletin board — An on-line information exchange system that usually contains a *message centre*, *data bases*, and news bulletins (the name "bulletin board" refers to a place where a person can read news bulletins and post his/her own for others to read). Users at remote locations can contact the bulletin board to obtain and share information with other users, as well as with the organization that operates the bulletin board. Access to a bulletin board requires that a user have a *PC*, a *modem*, *communication software*, and connection to a telephone line. ICPIC is an example of a bulletin board system.

Carrier signal

A high-pitched sound that is emitted from a *modem* when it is trying to establish *data communication* with another modem. This signal indicates that the two modems are attempting to transmit data at the same *baud* rate, using the same *communication parameters*.

Commands

Any instructions (e.g., numbers, characters, or words) required to operate a feature of a *bulletin board* or *software*. For example, a user searching a data base on a bulletin board types "H" to receive help instructions. "H" is the command issued by the user.

Communication parameters

Bulletin boards and *PSNs* around the world operate according to different communication standards: several transmission speeds and communication "languages" exist. In order for a PC to communicate data with a bulletin board or a PSN, both systems must use the same communication parameters, or else they won't understand one another. Communication software allows the user to change these parameters to take into account the requirements of a specific bulletin board or PSN. There are five communication parameters that most users should be concerned with:

- telephone number (the access number of the bulletin board or PSN);
- speed (1200, 2400, or 9600 baud);
- data bits (7 or 8);
- parity (none, even, or odd)
- stop bits (1 or 2).

Since these parameters vary from system to system, consult the user guide of the system you wish to access for details on its communication requirements.

Communication software

Software required to operate a *modem*, which in turn enables a PC to initiate *data communication* with a *bulletin board* system. Without communication software, a modem is useless, and vice versa. There are literally hundreds of brands of communication software: some popular brands include CrossTalk™, QModem™, Kermit™, and PROCOMM™.

Cursor The space or character on a PC's video *screen* that indicates your position. When you type *commands* into the PC, they appear at the cursor.

Data base *Software* that enables a user to access and search data *files*. Data bases electronically organize large amounts of information in a way that makes them comprehensible and accessible by a user.

Data communication Transferring electronic data from one computer to another via the telephone line. Data communication requires that both computers:

- have *modems*, *communication software*, and connection to a telephone line; and
- are using the same *communication protocols*.

DOS DOS refers to "Disk Operating System." This *software* is required for the basic functions of a *PC*; without these instructions it cannot do anything. DOS is the disk operating system used by the IBM™ family of PCs — other computers use other operating systems.

Downloading The process by which a user receives information from a *bulletin board* or another computer via *data communication*. When you are receiving data (such as a file), it is being transmitted "down" from the other computer. Downloading is the opposite of *uploading*.

Drive *Hardware* that is part of the memory system of a *PC*. Hard drives are memory devices that the user cannot touch; disk drives allow the user to insert diskettes into the PC. All drives are given their own name (e.g., drive A:, drive B:, drive C:)

File A collection of electronic data that is recognizable by a *PC* as a single unit. Files can contain text data, numeric data, or *software*. Every file has a name in the following format: FILENAME.EXT (eight characters for the name, a period mark, and then three characters for the file extension.) Files can be transmitted between PCs through *data communication*.

File transfer One of two methods of downloading information from a *bulletin board* system. By issuing specific *commands*, the user can request that the bulletin

board system transmit a particular data *file* to his/her *PC*. This file can be printed at a later time.

Free text search — A *data base* search method that scans the data base for any text that a user specifies, such as a word or a partial word. This search method is more flexible than a *keyword search* because it looks for any occurrence of the specified text in the data base, and is not restricted to the keyword list.

Full-screen editor — *Software* contained in a *bulletin board* system that enables a user to enter a message on the *message centre*. The full-screen editor functions like a *word processor* (i.e., it displays the entire *screen* at once), but it requires that the user's communication software has been set to the ANSI *terminal emulation*. A full-screen editor has more features than a *line editor*.

Full text document — A *file* that contains the entire text of a document, as opposed to its abstract or summary. Full text documents generally do not appear on *bulletin board* systems because their length prohibits the user from easily reading them on-line. Therefore, ICPIC has full text documents available to the user as downloadable files (i.e., files that can be *downloaded* from the bulletin board).

Gateway — An electronic "pathway" that enables two *PSNs* to communicate with one another. Gateways enable PSN users in one country to connect with a PSN in another country. Oftentimes this reduces the cost for the *user* to access a *bulletin board* system in another country.

Hardware — The physical components of your computer equipment. Hardware includes the *PC*, the *modem*, the printer, connecting cables, etc. Some hardware requires electronic instructions (i.e., *software*) in order for it to operate.

Keyword — A specific descriptive word that is assigned to a *data base file* that enables a *user* to retrieve the file when conducting a search. For example, ICPIC Publications data base contains files of different document abstracts, each of which contains keywords that relate to the information contained in the document.

LAN LAN refers to "Local Area Network." A LAN is two or more *PCs* connected together by cables or telephone lines in order to form an integrated communication network. PCs on a LAN generally share *software* and *modems*, therefore special procedures must be followed when a LAN-based PC tries to communicate with a *bulletin board*.

Line editor *Software* contained in a *bulletin board* system that enables a *user* to enter a message on the *message centre*. The line editor only allows a user to enter one line of text at a time, and it does not display the entire *screen* at once. A line editor does not have as many features as a *full-screen editor*.

Log off The process by which a *user* exits a *bulletin board* system after he/she has finished searching for information. It is the opposite of *logging on*.

Log on The process by which a *user* enters a *bulletin board* system to begin his/her search for information. It is the opposite of *logging off*.

Menu A *screen* displayed on a *PC*'s video terminal that contains a list of options from which a *user* can choose.

Message centre A feature of a *bulletin board* system that enables a *user* to send a message to any other user, and to read mail that has been left by other users. The message centre also allows the user to pose technical questions to the *SYSOP* and to receive assistance in using the bulletin board.

Mirror image system A duplicate of one *bulletin board* that resides at a location distant from the original. The "mirror image system" brings the data geographically closer to a specific audience, with the aim of reducing the costs of *data communication* and linking it with other existing bulletin boards. The "mirror image system" may or may not have a *NetMail*™ link with the original system. For example, US EPA has established its own "mirror image" ICPIC to assess the effectiveness of such a system.

Modem The computer *hardware* that enables your *PC* to undertake *data communication* with bulletin boards or other computers. "Modem" is derived from the

words "modulator" and "demodulator" — it converts information from your PC into sounds, transmits them over the telephone line, and then reconverts the sounds into data at the other side. Modems are rated by the speed at which they transmit data, i.e., their *baud* rate. A modem requires *communication software* to make it work.

NetMail™ *Software* that enables two *bulletin boards* to automatically exchange messages and files each night, thus creating a communication bridge between the two systems. For example, the OAIC in Paris, France and ICPIC "*mirror image system*" in Washington, D.C., USA use NetMail™ to exchange messages nightly.

Password A secret word known only to the *user* that allows him/her access to a *bulletin board* or a *PSN*.

PC PC refers to a "Personal Computer." Each PC contains some or all of the following:

- a central processing u (the "brains");
- one or more hard *drives* and/or disk drives (the "memory");
- a video *screen*;
- a keyboard;
- connecting cables;
- *software* required for its operation (DOS or similar software); and
- application software (e.g., *word processors* and *communication software*).

Two large manufacturers of PCs are IBM™ and Apple™.

Prompt The symbols, letters, or words displayed by a *bulletin board* system or other *software* when a *user* response is required. Prompts usually appear at the bottom left-hand side of the *screen*, to the right of the *cursor*. An example of a prompt is "Command?"

PSN PSN refers to Packet Switching Network. PSNs

are on-line communication networks that enable a *user* to connect with *data bases*, *bulletin boards*, and other PSNs. Many PSNs can operate between countries, enabling users to communicate internationally. PSNs can be owned and operated by commercial companies or by national PTT (public telephone and telegraph) organizations. All PSNs have costs associated with their use (e.g., user fees or connection charges), but these vary greatly. SprintNet[SM] is an example of a commercial PSN that can gateway to other PSNs in over 90 countries. Users can access ICPIC via regular telephone, via SprintNet[SM], or by one of the PSNs that can gateway to SprintNet[SM].

Rebooting Turning a *PC* off, waiting approximately 10 seconds, and then turning it on again. Rebooting is occasionally needed when *software* programme encounters an error and "freezes" (i.e., it does not respond to any *commands*).

Screen The image that appears on your video terminal when you are using your *PC*.

Screen capture One of two methods of *downloading* information from a *bulletin board* system. Screen capture, also known as file capture or capturing data to disk) is a feature of most *communication software*. By issuing specific *commands*, the *user* to can save the text information that scrolls across his/her screen when using a bulletin board system. This text data is saved to his/her PC and can be printed at a later time.

Software The electronic instructions or code that are required to operate computer *hardware*. Examples of software include *communication software*, *word processors*, *DOS* and *line editors*.

SYSOP SYSOP refers to "System Operator." The person responsible for maintaining and monitoring a *bulletin board* system. The SYSOP is responsible for answering all questions posted on the system's *message centre* and helping *users* who need assistance in operating or accessing the bulletin board.

Terminal emulation — *Communication software* has a *communication parameter* called terminal emulation. This parameter controls the movement of your *cursor* when you are connected to a *bulletin board* system. If you want to use the "Full-Screen Editor" function of ICPIC, you must set your communication software to "ANSI terminal emulation."

Text editor — *Software* that allows a *user* to read, edit, create, and print *ASCII* text files. In principle text editors are similar to *word processors*, but they lack most of the latter's sophisticated features. Examples of text editors include Edlin™, Brief™, and QEdit™.

Uploading — The process by which a *user* transmits information to a *bulletin board* or another computer via *data communication*. When you are sending data (such as a file), it is being transmitted "up" to the other computer. Uploading is the opposite of *downloading*.

User — Any person who accesses (or "uses") a *bulletin board* system.

Word processor — *Software* for a *PC* that enables the user to type and format professional-looking text documents. Examples of popular brands include Word™, WordPerfect™, and Multimate™.

Appendix D:
List of National Packet Switching Networks that Gateway to SprintNet℠

How to Use this Appendix
The list in this appendix identifies packet switching networks (PSNs) in various countries that can gateway to SprintNet℠, which in turn can access ICPIC. By following the procedure outlined in the "Getting Started" section of this guide, a user can connect to ICPIC from anywhere in the world.

Oftentimes, using a PSN to access ICPIC can offer cost savings compared to using a regular international telephone line. You must decide which access method is most cost effective and best suits your needs. UNEP IE/PAC does not recommend one method over another.

Description of a PSN
A PSN is one of several types of data communication systems that can be used to transfer information within and between countries. PSNs compress large amounts of data into "packets" that are electronically communicated across long distances.

PSNs are owned and operated by either private companies or public telephone and telegraphs (PTTs), both of which charge fees for using their PSN's services.

PSN Availability
Some countries have more than one PSN with equal capabilities. If more than one PSN is listed in this appendix for your country, then all of them will be able to connect to ICPIC.

Not every country has its own PSN: some use PSNs in adjacent countries, others have no PSN access at all. If your country is not included in this appendix, then it does not have a PSN that can connect with SprintNet℠. If this is the case, your only option to access ICPIC is the regular telephone method (see "Getting Started") or by connecting with a PSN in another country.

For those countries without access to a PSN, the only way to connect with ICPIC is by dialing directly using the regular telephone line (see "Getting Started" for more details).

Most PSNs have the ability to gateway with other networks, thus creating a temporary electronic bridge to data networks in other countries. Many PSNs, but not all, can connect with the SprintNet℠ system, which is a a commercially-owned PSN located in the United States operated by the U.S. Sprint™ company.

How PSNs Access ICPIC

ICPIC has a permanent electronic connection with SprintNet℠. SprintNet℠ can be accessed by users within the US, as well as from numerous countries in which SprintNet℠ has offices.

If you subscribe to the SprintNet℠ service, you can access ICPIC by first logging onto SprintNet℠ at your location, and then following SprintNet℠'s procedures for connecting with another data network. You then enter a special access code that instructs SprintNet℠ to connect to ICPIC in Paris. The system then opens an electronic connection with ICPIC and transfers you there.

SprintNet℠ (local call) ———> ICPIC (Paris)

If you subscribe to one of the PSN services listed in this appendix, the process is similar to that described above. First, you access your country's PSN as you would normally do. Second, you follow its procedures for connecting with another data network. Next, you enter a special address code that first instructs the PSN to connect to SprintNet℠ and then to connect to ICPIC in Paris. Your country's PSN sequentially opens an electronic connection with SprintNet℠ and then to ICPIC, and finally transfers you there.

Your National PSN ——> SprintNet℠ ——> ICPIC
(local call) (Paris)

For More Information

For each of the PSNs listed in this appendix, UNEP IE/PAC will provide the following information upon request:

- approximate costs for subscribing to the PSN;
- procedures for accessing the PSN (only useful to subscribers); and
- contact information for sales and technical representatives of the PSN.

After receiving this information, you should contact the PSN directly for additional information about subscription rates, access methods, passwords, etc.

Structure of this Appendix

Access Location refers to the country or region from which a particular PSN can be accessed.

Service Provider lists to the commercial organization or PTT that operates the PSN.

Network/Services lists the names of the PSN(s) available in that location.

This list was compiled from information supplied by the U.S. Sprint Company in May 1992. For more information about U.S. Sprint, contact:

U.S. Sprint
12490 Sunrise Valley Drive
Reston, Virginia 22096 USA

Tel: (1) 800-835-3638
Fax: (1) 703-689-5177
Telex: 7400944 INTL UC

All products and services listed in this appendix are trademarks or service marks of their respective companies.

Location	*Service Provider*	*Network/Services*
American Samoa (via Guam)	Telenet Japan	SPRINTNET
Antigua	Cable & Wireless (W.I.) Ltd.	AGANET
Argentina	ENTEL Argentina	ARPAC
Australia	Telecom Australia Overseas Telecommunications Commissions (OTC)	AUSTPAC (Domestic Network) OTC DATA ACCESS (International Gateway) SPRINTNET
Austria	Radio-Austria A.G. Sprint International	DATEX-P RADAUS DATA SPRINTNET
Bahamas	Bahamas Telecommunication Corp.	BATELCO
Bahrain	Bahrain Telecommunications Co. (BATELCO)	BAHNET
Barbados	Barbados External Telecomunications, Ltd.	IDAS
Belgium	Regie van Telegrafie en Telefonie (RTT) Plessey-Telenet B.V.	DCS SPRINTNET
Bermuda	Cable & Wireless Plc.	BERMUDANET
Brazil	Embratel (Empresa Brazileira De Telecomunicacoes S.A.) Sprint International	INTERDATA (International Gateway) RENPAC (Domestic Network) SPRINTNET
Canada	Telecom Canada CNCP Telecommunications	DATAPAC FASTPAK SPRINTNET
Cayman Islands	Cable & Wireless	IDAS
Chile	Entel Chile VTR	ENTEL VTRNET
China	Beijing Telecommunications Administration (CNPAC)	CHINAPAC

Location	*Service Provider*	*Network/Services*
Columbia	Empresa Nacional de Telecommunicaciones	COLDAPAQ
Costa Rica	RACSA (Radiografica Costarricense S.A.)	RASCA-PAC
Curaçao/Neth. Antilles	ITT World Communications	UDTS
Cyprus	Cyprus Telecommunications Authority	CYTAPAK
Czechoslovakia (via Austria)	Radio-Austria A.G.	RADAUS DATA
Denmark	Telecom Denmark	DATAPACK SPRINTNET
Dominican Republic	CODETEL	CODETEL
Egypt	Telecommunications Organization of Egypt	EGYPTNET
Faroe Islands	N/A	FAROEPAC
Finland	FINTELCOM	DATAPAK
France	France Telecom Telenet France	TRANSPAC (National Network) NTI (International Transit Node) SPRINTNET
French Antilles	Agence Commerciale des Télécommunications (ACTEL)	TRANSPAC
French Guyana	Agence Commerciale des Télécommunications (ACTEL)	TOMPAC
French Polynesia	Agence Commerciale des Télécommunications (ACTEL)	TRANSPAC
Gabon	Télécommunications Internationales Gabonaises	GABONPAC
Germany	Deutsche Bundepost Sprint International	DATEX-P SPRINTNET

Location	*Service Provider*	*Network/Services*
Greece	The Hellenic Telecommunications Organization SA (OTE)	HELLASPAK
Greenland (via Sweden)	Stockholm Telecommunications Administration (STA)	DATAPAK
Guam	Telenet Japan PCI	SPRINTNET PACNET
Guatemala	Empresa Guatemalteca de Telecommunicaciones	GUATEL
Hawaii	U.S. Sprint	U.S. SPRINT
Honduras	Empresa Hondureña de Telecomunicaciones	HONDUTEL
Hong Kong	Cable & Wireless (HK) Ltd. Sprint Japan Hong Kong Telecom	INTELPACK (International Gateway) SPRINTNET IDAS (Domestic Network)
Hungary (via Austria)	Radio-Austria AG	DATEX-P
Iceland	General Directorate of Posts and Telecommunications	ICEPAC
India	Videsh Sanchar Nigam Limited (VSNL)	GPSS
Indonesia	P.T. Graha Informatika Nusantara (Gratika)	SKDP
Iraq (via Bahrain)	Batelco	BAHNET
Ireland	Telecom Ireland	EIRPAC IPSS (EIRE) SPRINTNET
Israel	BEZEQ	ISRANET
Italy	Italcable PMTR Sprint International	ITAPAC ITALCABLE SPRINTNET
Ivory Coast	Commercial Informatique et Téléinformatique Intelci	SYNTRANPAC

Location	*Service Provider*	*Network/Services*
Jamaica	Jamaica International Telecommunications Ltd.	JAMANTEL
Japan	Telenet Japan Inc. Global Van Japan Nippon Telegraph and Telephone Public Corp. (NTT) Kokusai Denshin Denwa Co., Ltd., (KDD)	SPRINTNET GLOBALNET VENUS-P
Jordan (via Bahrain)	Batelco	BAHNET
Korea	Data Communications Corp. of Korea (DACOM)	DNS (DACOM-NET Service)
Kuwait	Ministry of Communications	SPRINTNET
Liechtenstein	Suisse PTT	TELEPAC
Luxembourg	Luxembourg Administration of P&T	LUXPAC
Malaysia	Syarikat Telecom Malaysia Berhad (STM) Headquarters	MAYPAC
Mauritius	OTS Company Ltd.	MAURIDATA
Mexico	SCT (Secreteria de Comunicaciones y Transportes)	TELEPAC
Micronesian Islands (Via Guam)	PCI Telenet Japan	PAC NET SPRINTNET
Monaco (via France)	France Telecom	TRANSPAC
Mozambique	LDA	TELEDATA
Netherlands	PTT Telecom B.V. Plessey-Telenet B.V.	DATANET1 (x.25 Service) TELEPAD (via PSTN) SPRINTNET
New Caledonia	Office of Posts and Telecommunications	TOMPAC

Location	*Service Provider*	*Network/Services*
New Zealand	Telecom Networks International Ltd. Sprint International	PACNET SPRINTNET
Norway	Norwegian Telecommunications Administration E.B. Telenet	DATAPAK SPRINTNET
Panama	Instituto Nacional de Telecommunicaciones (INTEL)	INTELPAQ
Peru	ENTEL	PERUNET
Philippines	Eastern Telecoms (ETPI)	EASTNET
Portugal	CPRM Telcomunicacoes Internacinais	TELEPAC
Puerto Rico	Puerto Rico Telephone Co. (PRTC)	PRTCNET SPRINTNET
Qatar	Q-Tel Doha	DOHPAK
Reunion Islands	Agence Commerciale Des Télécommunications	TRANSPAC
Russian Republic	Institute for Automated Systems Sprint Networks USSR	IASNET SPRINTNET
Saipan (via Guam)	PCI Telenet Japan	PACNET SPRINTNET
Saudi Arabia	Ministry of PTT	ALWASEET
Singapore	Singapore Telecom	TELEPAC
South Africa	The Postmaster General. Telecommunications (3K65)	SAPONET-P
Spain	Compañía Telfónica Nacional de España (CTNE) Loginet S.A.	IBERPAC (Public Packet-Switching Data Network) SPRINTNET
Sudan (via Bahrain)	Batelco	BAHNET

Location	*Service Provider*	*Network/Services*
Sweden	Stockholm Telecommunications Administration (STA)	DATAPAK
Switzerland	Headquarters of the Swiss PTT	TELEPAC
	Sprint International	SPRINTNET
Taiwan	International Telecom. Administration (ITA)	UDAS (Universal Database Access Service)
	Data Communications Institute	PACNET
	TTNS	SPRINTNET
Thailand	Communications Authority of Thailand	THAIPAK
Trinidad and Tobago	Trinidad and Tobago External Telecommunications Co. Ltd.	TEXTEL
Tunisia	N/A	RED-25
Turkey	General Directorate of PTT	TURPAK
Turks Island	Cable & Wireless (WI) Ltd.	IDAS
United Arab Emirates	Emirates Telecommunications Corporation (ETISALAT)	EMDAM
United Kingdom	Telmail Ltd.	Packet Switchstream (PSS)
	British Telecom International (BTI)	International Packet Switchstream (IPSS)
	Mercury Data Network Services	Mercury
	Sprint International	SPRINTNET
United States	U.S. SPRINT	SPRINTNET
Vanuatu	VANITEL	VIAPAC
Venezuela	N/A	N/A

Location	*Service Provider*	*Network/Services*
Virgin Islands (via Puerto Rico)	PRTC U.S. Sprint	PRTCNET SPRINTNET
Yugoslavia	Gentel Belgrade	YUPAC
Zimbabwe	Telecoms Zimbabwe	ZIMNET

N/A: NOT AVAILABLE

Appendix E:
Additional Communication Software Packages

This section describes how to connect to ICPIC with a PC, using several popular communication software packages. There are literally hundreds of brands of communication software sold throughout the world, therefore this section only describes some of the more popular ones. There is no single brand that is preferable — virtually every one should be able to access ICPIC.

This user guide assumes that the user is familiar with basic PC operations and that the communication software is correctly installed on the PC.

Kermit™ 2.30

Step 1: Invoking Kermit™

In the DOS directory containing the Kermit™ software, type:

kermit <return>

Step 2: Adjusting Software Settings

You must type the following commands to tell Kermit™ how to communicate with ICPIC:

set port 1 <return>
(or 2 depending on your communications port)
set baud 2400 <return>
(or 1200 depending on your modem speed)
set parity none <return>
set local on <return>
set local-echo off <return>
set flow Xon <return>
set handshake none <return>
set terminal none <return>
set key \315 ATDT <return>

Note: The "set key" command saves the ICPIC telephone number to function key #1. You may need to adjust the telephone number by entering a "1" or "9" depending on your telephone system.

Note: You may save these settings in a file using a line editor (e.g., Edlin™) and recall them the next time you use Kermit™ by entering:

take "filename.ext" <return>
(where "filename.ext" is the name of the file created)

Step 3: Dialing ICPIC
To dial ICPIC type:

connect <return> (to connect to your modem)
<F1> <return> (to start dialing the system)

Kermit™ will dial and connect with the host computer. Follow the instructions in the "Logging On" section of this user guide to access ICPIC.

Step 4: Exiting Kermit™
You may exit Kermit™ by holding down the control (Ctrl) key and pressing the "]" (right square bracket), and then typing the letter C. At the "Kermit-MS?" command, type:

quit (or exit) <return>

For help with Kermit™ commands, type a question mark "?" at the "Kermit-MS?" command.

PROCOMM™ 2.4.2

For your initial use of PROCOMM™ to access ICPIC, follow these steps:

Step 1: Invoking PROCOMM™
In the DOS directory containing the PROCOMM™ software, type:

procomm <return>

Step 2: Adjusting Communications Settings
Type the <Alt > key and the D key simultaneously (Alt-D) to display the dialing directory. If this is your first time dialing into ICPIC, you must create a dialing directory for ICPIC. After you have created a dialing directory for ICPIC, you may skip Step 2 and go directly to Step 3. To create a new entry, you must follow the procedure described below.

1. Type "R" to display the revised entry windows.

2. Type the number of the entry to revise and type the <return> key.

3. Directory name: Type "ICPIC" for the Name request and type the <return> key.

4. Telephone number: Type the telephone number for the Telephone Number request and type the <return> key. (For dialing long distance and other special dialing procedures, see the PROCOMM™ Reference Manual.)

5. Baud Rate: To enter the Baud Rate, type any key to scroll through the choices until your baud rate (1200 or 2400) appears and type the <return> key.

6. Parity: To enter the Parity, type any key to scroll through the choices until N for "none" appears and type the <return> key.

7. Data Bits: To enter the Data Bits, type any key to scroll through the choices until 8 appears and type the <return> key.

8. Stop Bits: To enter the Stop Bits, type any key to scroll through the choices until 1 appears and type the <return> key.

9. Echo: To enter the Echo On, type any key to scroll through the choices until N appears and type the <return> key.

10. Command File: For further information on this function, please refer to the PROCOMM™ Reference Manual. For now, type the <return> key for no Command File name.

11. Save entry: Type "Y" for Yes and the revised entry is saved on the PROCOMM™ Dialing Directory.

Step 3: Dialing ICPIC

To dial, select the number of the entry for ICPIC and type the <return> key. PROCOMM™ then dials the number and connects with the ICPIC host computer. Follow the instructions in the "Logging On" section of this user guide to access ICPIC.

Step 4: Exiting PROCOMM™

After logging off ICPIC, to exit PROCOMM™, type the Alt key and the X key simultaneously (Alt-X), and the Exit window will be displayed. Type "Y" to exit or "N" to continue using PROCOMM™.

For information on more advanced functions, such as automatic log on and file uploading and downloading, see the PROCOMM™ Reference Manual for details.

Qmodem™ SST version 4.2F

For your initial use of Qmodem™ to access ICPIC, follow these steps:

Step 1: Invoking Qmodem™
In the DOS directory containing the Qmodem™ software, type:

qmodem<return>

Step 2: Adjusting Communication Settings
Type the <Alt> key and the D key simultaneously (Alt-D) to display the dialing directory (called the "Phone Book"). If this is your first time dialing into ICPIC, you must create a new entry for ICPIC. After you have created a dialing directory for ICPIC, you may skip Step 2 and go directly to Step 3. To create a new entry, you must follow the procedure described below.

1. Type the <insert> key to create a new entry. This will appear on the screen as a number with a blank line.

2. Type the <Alt> key and the R key simulaneously (Alt-R) to revise the new entry.

3. Name: Type "ICPIC" and then <return>.

4. Number: Type the ICPIC telephone number and then <return>.

5. Password and Script: Do not modify these fields. Instead, bypass them by typing <return> two times.

6. Baud Rate: Type the appropriate baud rate or use the <F2> key to select from a list of choices. Type <return> again.

7. Data Bits: Type 8 and then <return>.

8. Parity: Type N. Type <return> again.

9. Stop Bits: Type 1 and then <return>.

10. Type <F10> to save the entry and return you to the dialing directory.

Step 3: Dialing ICPIC

To dial, use the up and down arrow keys to highlight the ICPIC entry. Type <return> and Qmodem™ automatically dials the number and connects with ICPIC. Follow the instructions in the "Logging On" section of this user guide to access ICPIC.

Step 4: Exiting Qmodem™

After logging off ICPIC, to exit Qmodem™ you must type the <Alt> key and the X key simulaneously (Alt-X), and the exit menu will be displayed. Type "Y" to exit or "N" to continue using Qmodem™.

Apple Macintosh Smartcom™ II

Connecting with ICPIC

Step 1: Invoking Smartcom™

Click twice on the Systems icon.
Click twice on the Smartcom™ folder.
Click twice on the Smartcom™ II icon.

Step 2: Adjusting Communications Settings

1. Pull down the Settings menu
2. Click on "Speed" and "Format".
3. Transmission speed (baud): To set the speed, click on "1200" or "2400", depending on the capabilities of your modem.
4. Data Bits: To set the data bits, click on "eight".
5. Stop Bits: To set the stop bits, click on "one".
6. Parity: To set the parity, click on "None".
7. Flow control: To set the flow control, click on "Xon/Xoff"
8. Click on "Okay".

Step 3: Dialing ICPIC

1. Pull down Connection menu and then click on "Choose Port".
2. Click on the telephone symbol.
3. Pull down the Connection menu and then click on "Phone Number".
4. Type "(33 1) 45 79 40 59".
5. Click on "Okay".
6. Click on the telephone symbol.
7. Click on "Okay".

The phone should now dial ICPIC and you should see the ICPIC introductory screen in about 30 seconds. To exit Smartcom™ II, pull down the File menu and click on "Quit".

Step 4: Exiting Smartcom™

When you have finished using ICPIC, pull down the File menu and click on "Save". Save the file under the name "ICPIC".

1. Click twice on Smartcom folder.
2. Click twice on the ICPIC icon.
3. Click twice on the telephone symbol.

Capturing, Downloading, and Uploading Information to ICPIC

Please refer to "Downloading Information from ICPIC" and "Uploading Information to ICPIC" for additional details about these operations.

To Capture

Step 1: Select Information to be Captured
Select the desired section of the text by placing the cursor at the beginning of the text and dragging the cursor to the end (the text will be highlighted).

Step 2: Begin Capture
Click on the Capture icon.

Step 3: Enter File Name
A Dialog box will appear on the screen. Enter a file name and click on the Capture icon (click on "Eject" if you want to insert another disk, or click on "Drive" if you want to select another disk drive.)

If the name of an existing file is entered, a Dialog box will appear asking you if you want to add to or replace the file. Click on "Add" to append data to the file. Click on "Replace" to delete contents of the old file before capturing the new data.

To Download

Step 1: Select a File Transfer Protocol
Before attempting to download, make sure that ICPIC's transfer protocol is set to the same protocol as your Mac. At the ICPIC Main Menu, type "T" and then choose the appropriate transfer protocol.

Step 2: Request the File for Downloading
At the ICPIC Main Menu, type "D" to download a file. When ICPIC asks you which file name to download, type the name of the file you wish to receive. ICPIC will indicate: "Checking file transfer request. Please wait..." Next, a description of the file will appear. Click on the Receive icon.

Step 3: Instruct Your Communication Software to Receive a File
A Dialog box will appear on the screen. Enter a file name and click on "Begin" (click on "Eject" if you want to insert another disk, or click on "Drive" if you want to select another disk drive). A "Receive Process" box will appear to show the transfer process. When the transfer is complete, the computer will tell you the name of the file received and that the transfer was successfully completed. If you want to cancel the transfer, click on "Cancel" in the "Receive Process" box.

To Upload

Step 1: Select a File Transfer Protocol
Before attempting to upload, make sure that ICPIC's transfer protocol is set to the same protocol as your Mac. At the ICPIC Main Menu, type "T" and then choose the appropriate transfer protocol.

Step 2: Notify ICPIC that a File is Being Uploaded
At the ICPIC Main Menu, enter "U" to upload a file. When

ICPIC asks you the name of the file you wish to upload, type the appropriate name. ICPIC will indicate: "Checking the file transfer request. Please wait..."

Before beginning the upload process, you must enter a description of the file to be uploaded. (All files are reviewed by UNEP IE/PAC before being made available to other ICPIC users.) You are permitted a maximum of 5 lines for the description.

ICPIC then gives an "Upload Drive" description and "Upload Status". After viewing this description, click the on the Send icon.

Step 3: Instruct Your Communication Software to Transmit File

A Dialog box will appear. Select the file to be uploaded and click on "Send" in the Dialog box. A "Send Process" box will appear to show the transfer process. When the transfer is complete, your computer will tell you the name of the file sent and that the transfer was successfully completed. If you want to cancel the transfer, click on "Cancel" in the Second Process box.

Appendix F: Guidelines for Submissions to ICPIC

IE/PAC is constantly in search of information describing what companies and other organizations are doing to implement cleaner production. By sharing technical case studies and other information, ICPIC users contribute to the improvement of our common environment and help to distribute substantive knowledge around the world to everyone in the cleaner production network.

For each section of ICPIC, a special input form has been designed. A copy of each is included in this Appendix F. You may submit information to ICPIC by uploading a text file to ICPIC (see "ICPIC Uploading" section) or by transmitting the information to ICPIC by mail, fax or telex:

United Nations Environment Programme
Industry and Environment Programme Activity Centre
39-43 Quai André Citroën
75739 Paris CEDEX
France

Telephone: 33-1-44-37-14-50
Fax: 33-1-44-37-14-74
Telex: 204 997 F
Cable: UNITERRA PARIS

Review Process
Case studies and other information submitted to ICPIC will be carefully reviewed prior to entry. Case studies will undergo engineering/technical reviews, quality assurance checks, and be reviewed for style and format. During the review process, you may be contacted by a reviewer to supply additional/missing information or to clarify statements.

UNITED NATIONS ENVIRONMENT PROGRAMME
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IE/PAC - CAP/E

INDUSTRY AND ENVIRONMENT
PROGRAMME ACTIVITY CENTRE
Téléphone: 33 (1) 44 37 14 50
Telex : 204 997 F
Câbles: UNITERRA PARIS
Fax: 33 (1) 44 37 14 74

CENTRE D'ACTIVITÉ DU PROGRAMME
INDUSTRIE ET ENVIRONNEMENT
Tour Mirabeau
39-43, quai André Citroën
75739 PARIS CEDEX 15
France

International Cleaner Production Information Clearinghouse (ICPIC)

Bulletins: News in the Cleaner Production Area

Title of News Item: _____

Date of News Item: _____

Item description: _____

_____

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For further information contact:

Name: _____

Address: _____

Telephone: _____ (include country code)

Fax: _____

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IE/PAC - CAP/IE

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39-43, quai André Citroën
75739 PARIS CEDEX 15
France

International Cleaner Production Information Clearinghouse (ICPIC)

Cleaner Production Calendar Events

To submit a calendar event to ICPIC, provide the following information:

Date of event: _____

Event title: _____

Sponsor(s): _____

Location: _____

Event description: _____

_____

_____

_____

_____

_____

For further information about this event, contact:

Name: _____

Position: _____

Address: _____

Telephone: _____(include country code)

Fax: _____

If possible, please attach brochures or other event documentation and return this form to the UNEP address indicated above.

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75739 PARIS CEDEX 15
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International Cleaner Production Information Clearinghouse (ICPIC)

Cleaner Production Publications

To submit a publication to ICPIC, provide the following summary information in addition to a copy of the publication itself.

Publication title: _____

Author(s): _____

Contact/source for obtaining the document:
Name: _____

Organization: _____

Address: _____

Telephone: _____

Fax: _____

Keywords: _____

Summary (attached to the document's abstract if available):

_____

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Tour Mirabeau
39-43, quai André Citroën
75739 PARIS CEDEX 15
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International Cleaner Production
Information Clearinghouse (ICPIC)

Case-Study Format
Guidelines for Case Study Abstractors

1.0 Headline

A short attention-getting phrase or sentence highlighting the significance of the case-study that should include industry or process, waste type, and cleaner production technique. Describe the problem that was solved.

2.0 SIC or ISIC Code

Four-digit Standard Industrial Classification code(s) that best descrioes the industry segment(s) referenced by the case study. Employ the highest level of specificity (i.e., use three- or two-digit SIC codes if information does not follow more detailed identification). Use as many SIC codes as are relevant to the subject study, the primary SIC codes should always be the first code listed. Precede all International SIC codes with "I" (e.g. I2261).

3.0 Name and Location of Company

the name and location of the facility that implemented the case study. Include address if possible (street, city, state, country and telephone number).

4.0 Cleaner Technology Category

A brief description of the principle(s) behind the cleaner production technology referenced in the case study, such as:

- Periodic assessment
- Process/equipment modification
- Material/product substitution
- Housekeeping
- Training and supervision

- Waste segregation and separation
- Production planning and sequencing

5.0 Case Study Summary

Summarize information to the level of detail provided in the case study, in the following areas:

5.1 Process and Waste Information: A description of the relevant original manufacturing process or area of the plant to which cleaner production technique applies, physical state of the target waste streams (solid, liquid, gas or sludges), changes in the process resulting from the cleaner production technique, and a description of any positive or negative effects on the wastes, products or production rates after implementing the new technology. Include any changes in:

- products or production rates resulting from the application
- new or existing waste stream: generation and composition
- new or existing raw materials and consumption rates
- energy usage
- operating procedures

5.2 Scale of Operation: A description of the size of the process or operation. If possible, include quantitative information on the amount of the product being produced or manufactured and the amount of waste being generated.

5.3 Stage of Development: A one-line description of the stage of development the cleaner production technique was in at the time of the case study (e.g. planning stage, bench test, pilot stage, or fully implemented). Indicate whether quantitative figures are estimated or based on actual production.

5.4 Level of Commercialization: An indication of whether the technology or process was commercially available at the time of the case study. Indicate whether or not the equipment and/or materials were readily available, or if they were specifically designed for this application.

5.5 Material/Energy Balances and Substitutions: A tabulation of quantitative changes in material generation and use prior to and resulting from the cleaner production technique. Include in the following table, information for each waste stream or product, and designate "N/A" when information is not available (provide units of measurement for all numerical data):

Material Category	Quantity Before	Quantity After
Waste Generation		
Feedstock Use		
Water Use		
Energy Use		

6.0 Economics*

A study of the costs and savings reported in the case study. Include dates and currencies for all economic data reported.

6.1 Investment Costs: A summary of all capital costs and a detailed description of the purchased item(s) or service. Include specifications (i.e. number, size capacity, etc.) for each item used.

6.2 Operational and Maintenance Costs: Changes in operational and maintenance cost (per month or year) and changes in personnel or hours required.

6.3 Payback Time: The approximate payback period for the particular cleaner production technology used in the case study (total investment/net savings/year).

7.0 Cleaner Production Benefits

A detailed discussion of the benefits resulting from the cleaner production technique, including but not limited to:

- economic benefits (include source of savings, i.e. reduced feedstocks),
- improved public relations,
- reduced liabilities,
- changes in regulatory compliance.

Indicate, if possible, what factors were the driving force behind implementing the technique.

8.0 Technical Constraints

A description of the technical constraints that could prevent implementation of the technology (i.e. physical, chemical or biological limits of a manufacturing or treatment process). discuss and regulatory barriers in implementing the cleaner technology and indicate what other problems were encountered during the implementation of the technology.

9.0 Date Case Study was Performed

The actual date the cleaner production measures were implemented.

* Disclaimer: Economic data will vary due to economic climate, varying governmental regulations and other factors.

10.0 Contacts and Citation

10.1 Type of Source Material: The type of source material abstracted:

- book or chapter,
- journal or journal article,
- organization report,
- conference proceedings,
- unpublished material,
- other (specify).

10.2 Citation: citation for the document abstracted including: author(s), title of book, journal article, or proceedings; volume; number; and month and year of publication. In addition if the document is available through ISBN, enter the ISBN number.

10.3 Level of Detail of the Source Material: An indication whether or not additional detail is available in the source document for this case study (applicable only for documents that are pubiicly available). Indicate what additional information is available (i.e., process, waste, etc.)

10.4 Industry/Program Contact and Address: The name, address, and phone number of the person that can be reached for further information concerning the case study.
Authorization must be given by the contact prior including their name in this field.

10.5 Abstractor Name and Address: The name, organization, address and telephone number of the person preparing the case study abstract.

11.0 Keywords

Descriptive keywords selected from the attached ICPIC keyword lists for each of the following categories:

11.1 Waste type: the conventional waste(s) that is/are acted on by the cleaner production option, not the waste(s) generated after implementing the cleaner production technique.

11.2 Process type/waste source: The original industrial process(es) or sources of the waste(s) that is/are modified by the cleaner production technique.

11.3 Cleaner Production Technique: The techniques that were implemented at the facility and are principally responsible for reducing waste generations.

11.4 Other Keywords: Other keywords, as appropriate, that accurately describe the case study and assist users in locating this abstract including:

- environmental media (water, soil, air)
- product names

- feedstocks
- special incentives
- geographic/institutional keywords

Use as many keywords as necessary to accurately describe the case study in each category. If ideal keywords are not found on the keyword list, please add new ones.

12.0 Assumptions

Please provide a listing of any assumptions used when abstracting. Reference the sections of the abstract that relied upon the assumption. Any discrepancies encountered in the source should also be presented.

13.0 Peer Review

An indication of whether or not the source document has gone through a formal peer review process. Indicate Yes, No, or Unknown.

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International Cleaner Production Information Clearinghouse (ICPIC)

Contact List of Experts

Directions: Cleaner production is the continuous application of an integrated preventive environmental strategy to processes and products to reduce risks to humans and the environment. The goals of cleaner production are to avoid the creation of wastes in the first place and to minimize the use of raw materials and energy. It does not focus on what to do with wastes and emissions after they have been created. If you have expertise in cleaner production please complete this form and return it to UNEP IE/PAC, where it will be reviewed for quality control. Once entered in the system, you will be part of the cleaner production network and may be contacted by other members.

First Name: _____ ❑ Mr ❑ Ms ❑ Mrs Surname: _____

Title: _____

Organization: _____

Department, Branch or Office: _____

Address: _____

City: _____ Province/State: _____

Postal Code: _____ Country: _____

Telephone No.: _____ Fax No.: _____ Telex No.: _____
Country Code *Country Code*

Languages Spoken: _____

EXPERTISE RELATING TO CLEANER PRODUCTION
(Check appropriate boxes and write in specifics where necessary)

I. MANUFACTURING PROCESS

- ❑ Specific Industrial Sector
- ❑ Textiles
- ❑ Leather Tanning
- ❑ Food Manufacturing
- ❑ Metal Manufacturing
- ❑ Pulp and Paper
- ❑ Printing and Publishing
- ❑ Petroleum
- ❑ Chemical - specify sector _____

- ❑ Other - specify: _____

II. CLEANER PRODUCTION METHODS

- ❑ Energy Conservation
- ❑ Water Conservation
- ❑ Toxic Use Reduction
- ❑ Good Housekeeping
- ❑ Process Modification
- ❑ Other - specify: _____

- ❑ Analytic Tools
  - ❑ Process Audit
  - ❑ Other - specify: _____

III. PRODUCTS

Design

- ❑ Product
- ❑ Packaging
- ❑ Remanufacturing
- ❑ Reuse

Analytic Tools

- ❑ Life Cycle Analysis
  - ❑ Methodology
  - ❑ Applications

- ❑ Other - specify: _____

IV. POLICY

Government

- ❑ Programmes
- ❑ Policy Analysis
- ❑ Legislation

Industry/Management

- ❑ GEMI Environmental Self Assessment Programme
- ❑ ICC Business Charter for Sustainable Development
- ❑ UK Environmental Management System

- ❑ Corporate CP Programmes
- ❑ Worker Health and Safety
- ❑ Other - specify: _____

V. Lectures or Training Courses Given (please attach syllabus)

- ❑ University
- ❑ Industrial Training
- ❑ Technical Assistance

- ❑ Other - specify: _____

NON-CLEANER PRODUCTION EXPERTISE

- ❑ Air Pollution Control
- ❑ Waste Water Treatment
- ❑ Hazardous Waste Management
- ❑ Solid Waste Management
- ❑ Other Pollution Control - specify: _____

OTHER COMMENTS _____

_____

_____

_____

Appendix G:
ICPIC User Address Form

By providing your address as outlined below, IE/PAC will be able to send you updates to the User Guide. You may wish to punch holes in the pages and place the User Guide in a binder.

Name: _____

Title/Organization: _____

Street Address: _____

_____

_____

Country: _____

Evaluation Questionnaire

INTERNATIONAL CLEANER PRODUCTION INFORMATION CLEARINGHOUSE

ICPIC User Guide
Version 1.0

As part of its continuing review of the impact of publications it supports, the United Nations Environment Programme, Industry and Environment Programme Activity Centre (UNEP IE/PAC) would appreciate your co-operation in completing the following questionnaire.

Please complete the questionnaire in the order in which it is presented and do not correct or erase your initial answers.

1. Quality

Please rate the following quality aspects of the publication by placing a check in the appropriate box.

	Very good	Adequate	Poor
Subject coverage	❑	❑	❑
Up-to-date	❑	❑	❑
Readability	❑	❑	❑
Organization	❑	❑	❑
Presentation	❑	❑	❑

2. Usefulness

In general, how much of the publication is:

	Most	About half	Little
Of technical/substantive value to you?	❑	❑	❑
Relevant to you?	❑	❑	❑
New to you?	❑	❑	❑
Will be used by you?	❑	❑	❑

3. Effectiveness in achieving the objective

The objective of this publication is to provide detailed information on how to access and how to use the ICPIC. In your opinion, to what extent will the publication contribute to the achievement of this objective?

(Please check the category that applies) ❑ fully ❑ adequately ❑ inadequately

Please state the reasons for your rating.

_____

_____

_____

_____

_____

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF ENVIRONMENTAL ENGINEERING AND TECHNOLOGY DEMONSTRATION

POLLUTION PREVENTION INFORMATION CLEARINGHOUSE
401 M STREET, S.W. (RD - 681)
WASHINGTON, D.C. 20460

UNITED NATIONS ENVIRONMENT PROGRAMME

INDUSTRY AND ENVIRONMENT PROGRAMME ACTIVITY CENTRE

39-43 QUAI ANDRÉ CITROËN
75739 PARIS CEDEX 15 - FRANCE
TEL: 33 (1) 44 37 14 50
TLX: 204997F
FAX: 33 (1) 44 37 14 74